

FIG. 1

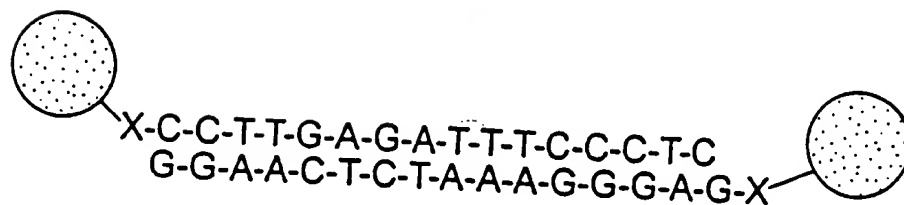
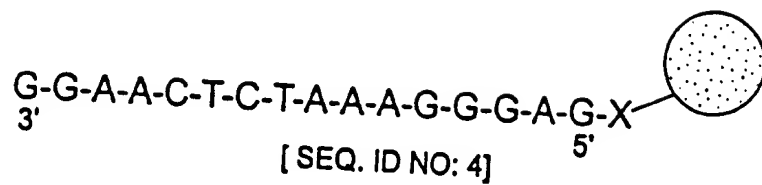
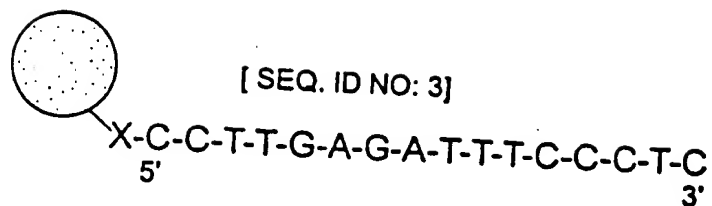


FIG.2

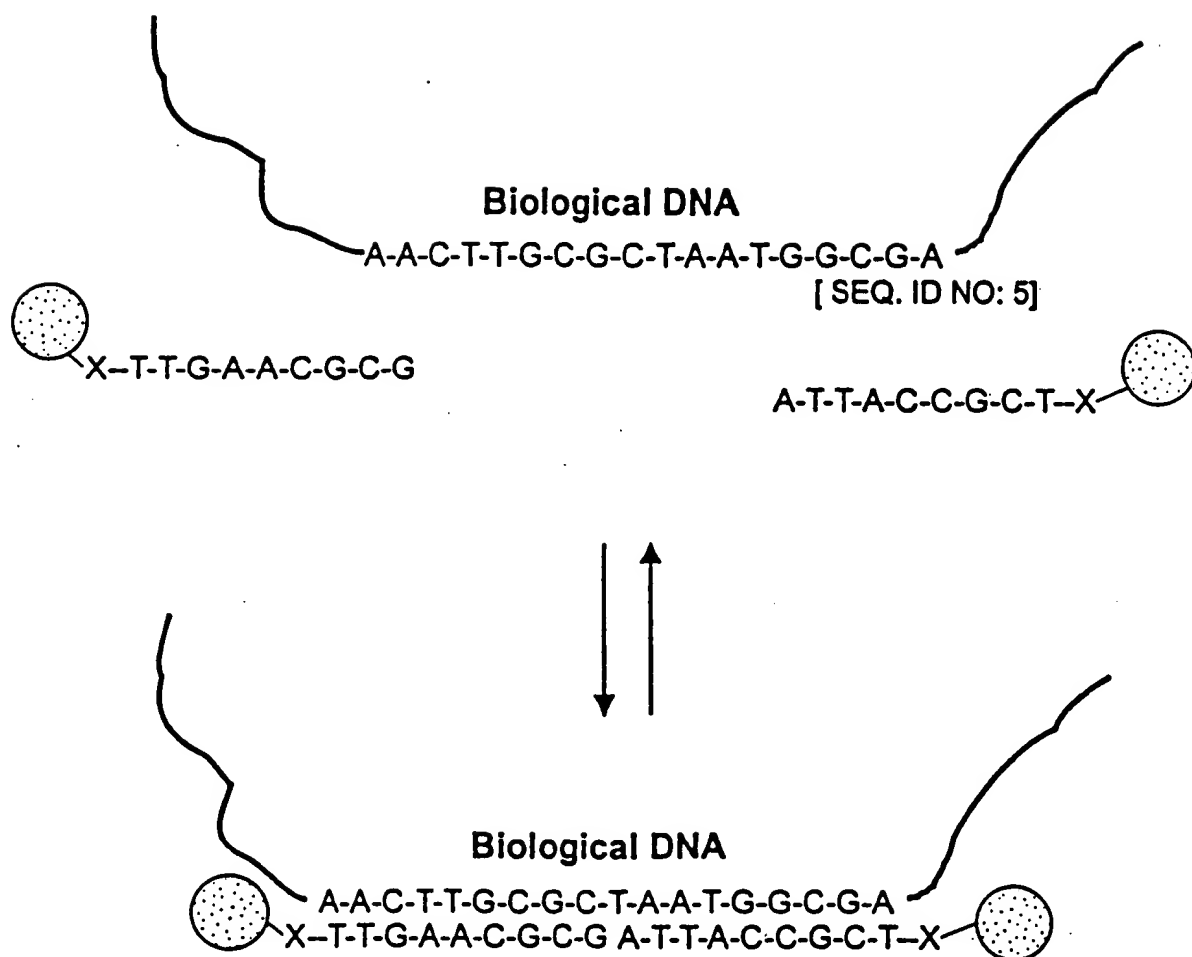


FIG.3

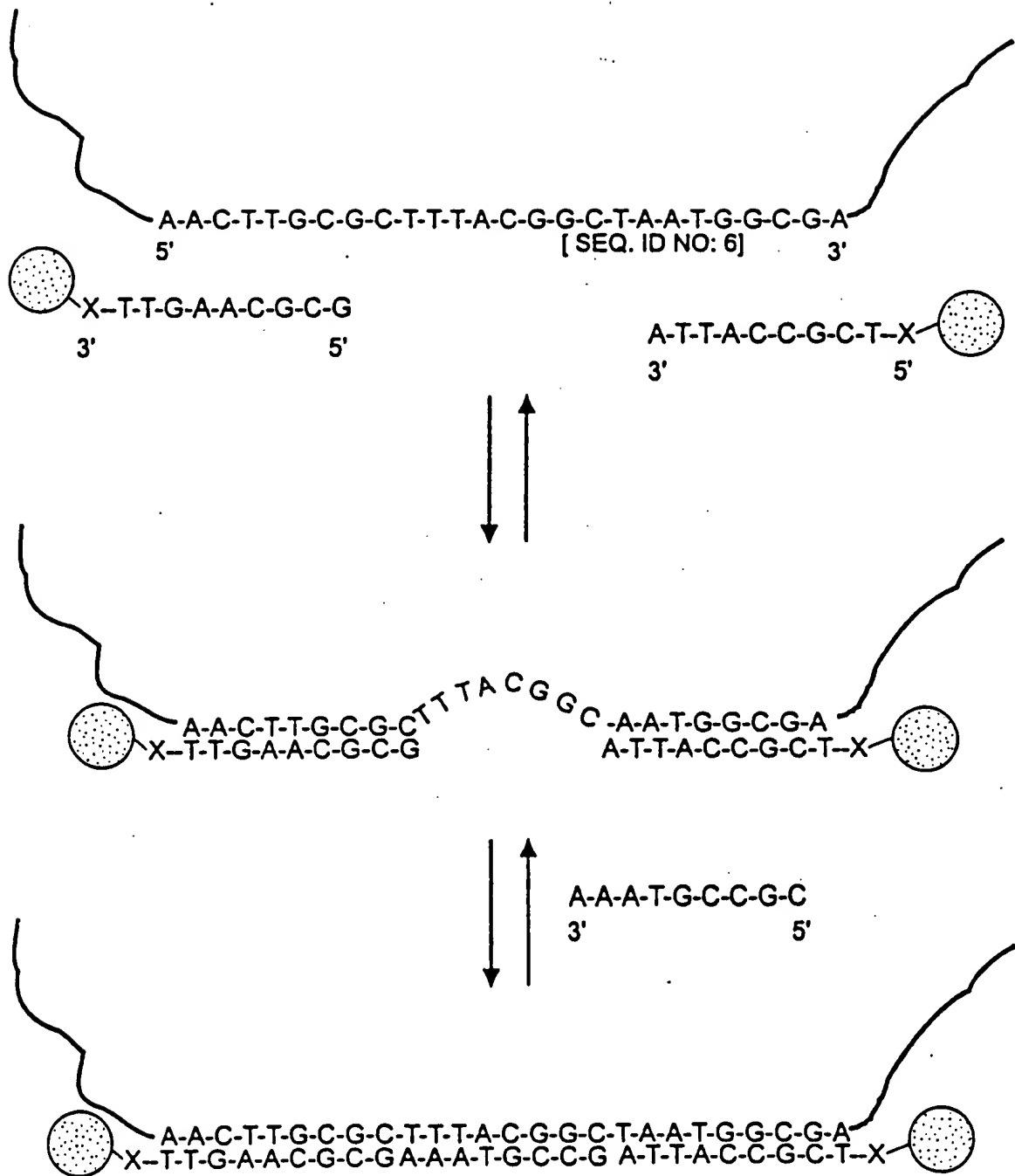
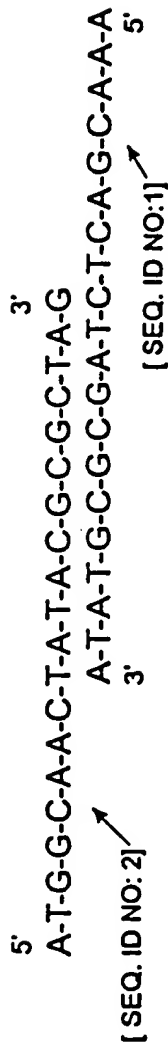
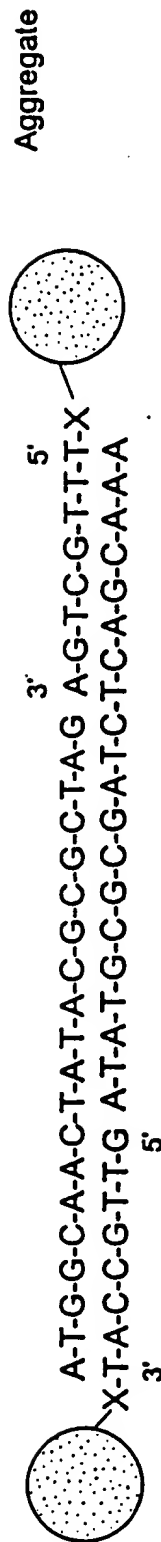


FIG. 3

FIG. 4



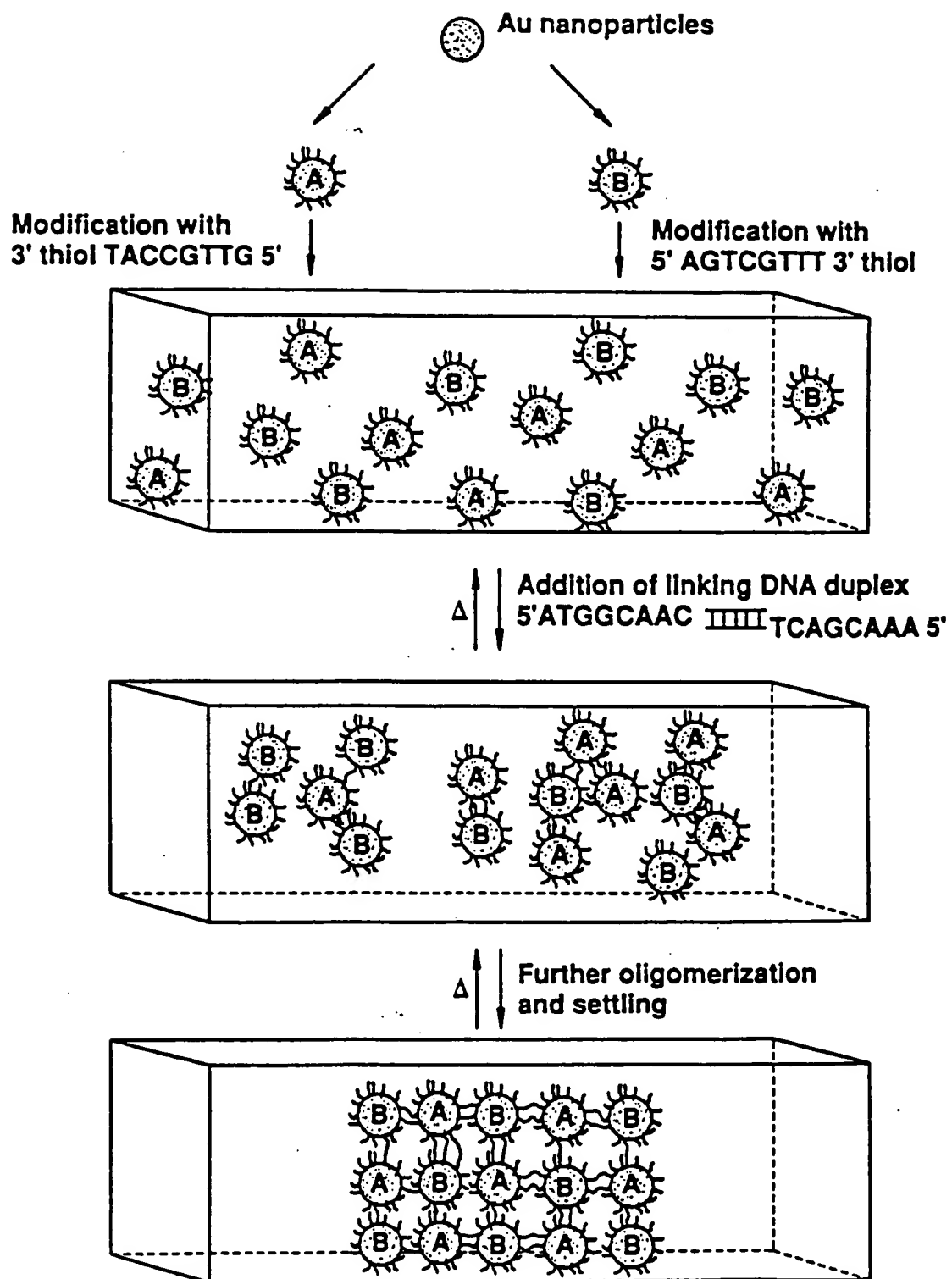
Heat ↑ Mix below T_m ↓



Heat ↑ Stand below T_m ↓

Precipitate (formed by further cross-linking)

FIG.5



2007-10-10 14:00:00

099497-10001



FIG. 6A

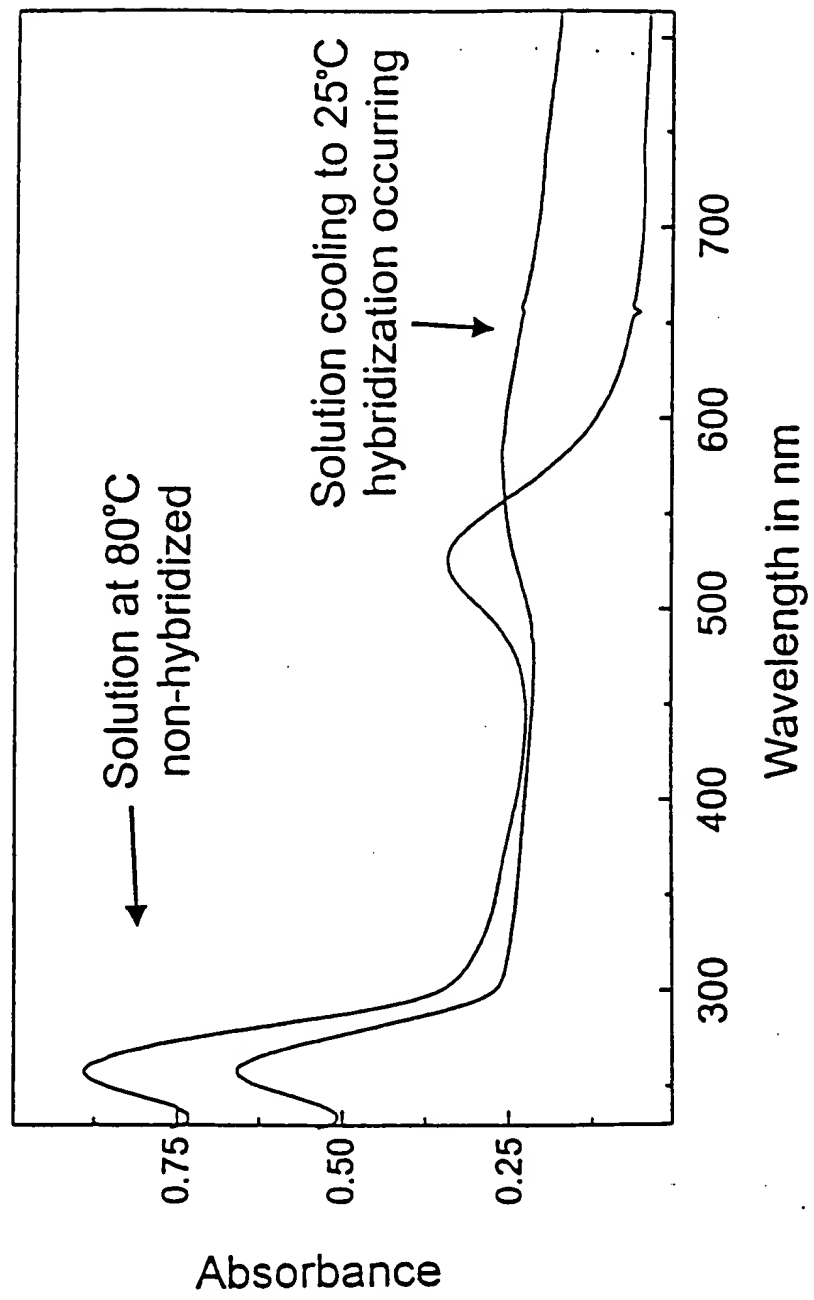


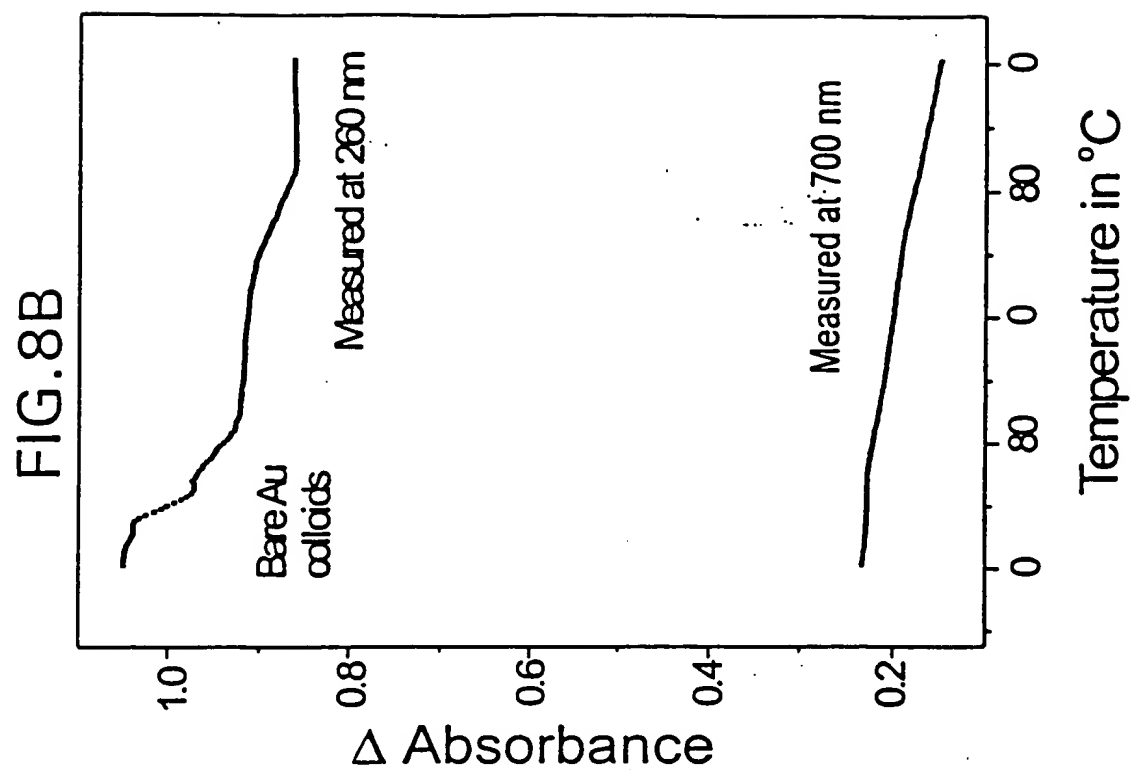
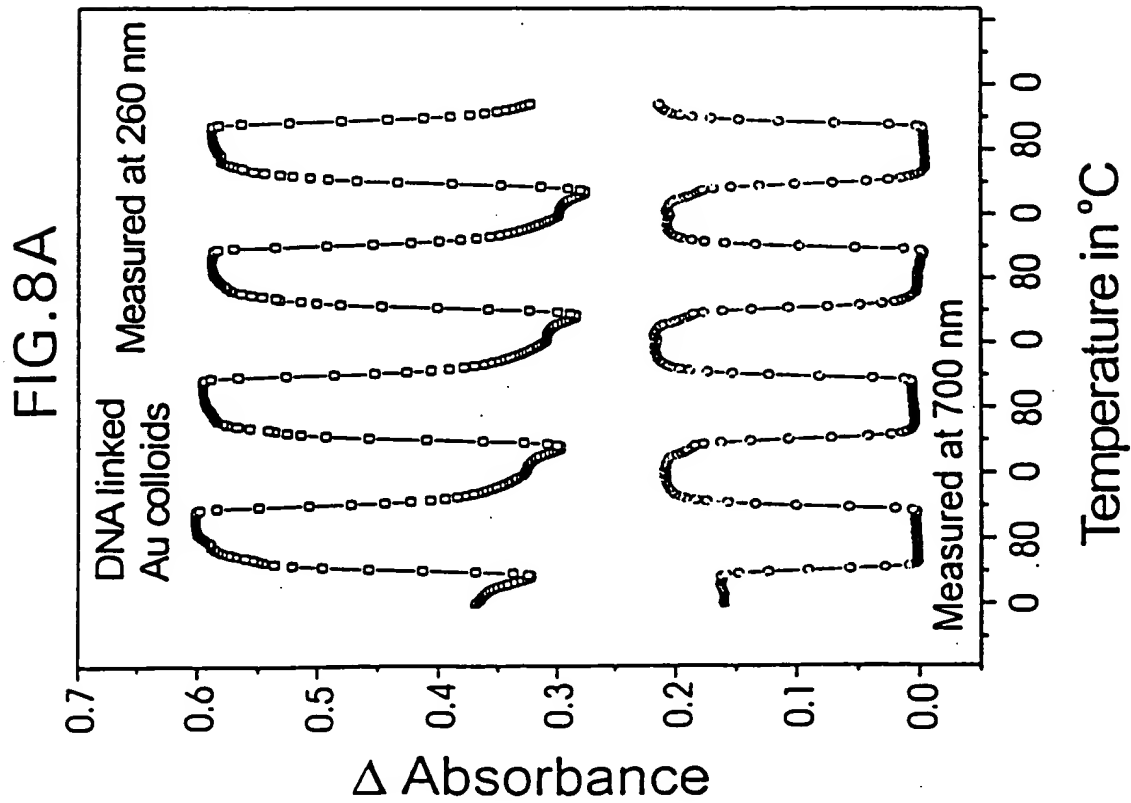
FIG. 6B



FIG. 6C

FIG.7





FOOT 20042660



FIG.9A

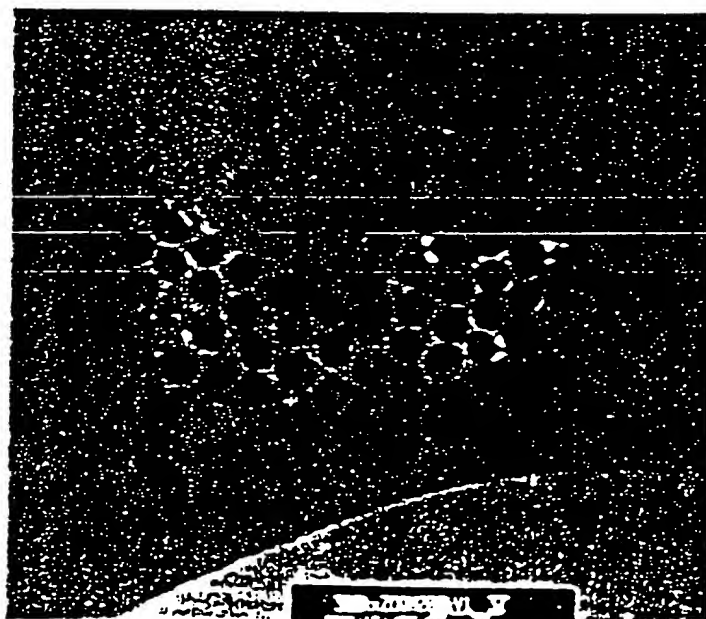


FIG.9B

TOP SECRET 20014650

FIG.10

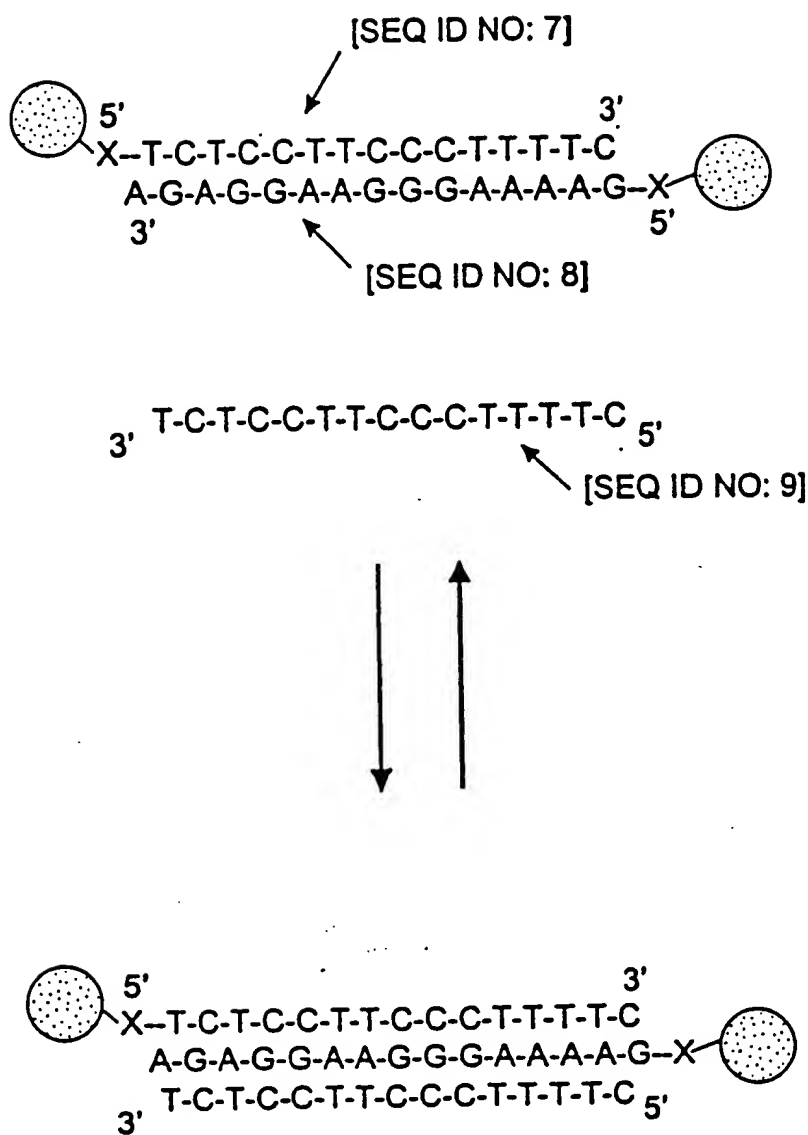


FIG. 11

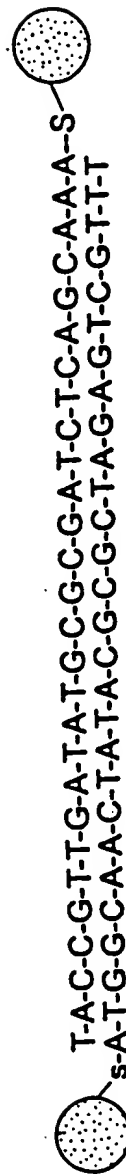
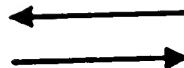
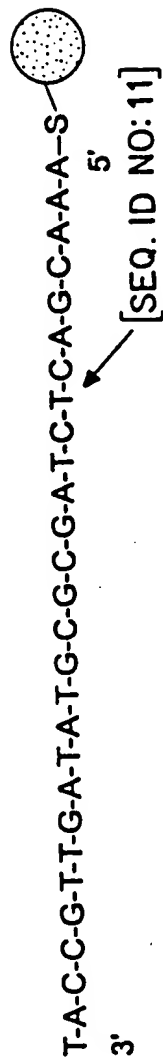
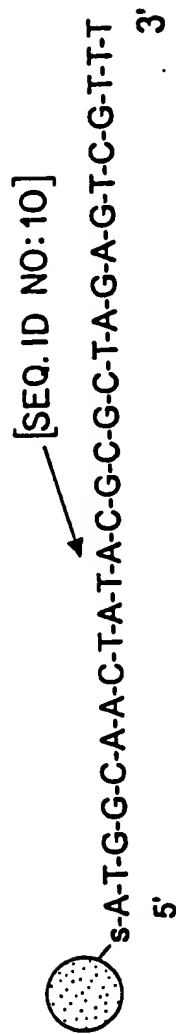


FIG. 12A

Complementary Target



FIG. 12B

Probes without Target



FIG. 12C

Half Complementary Target

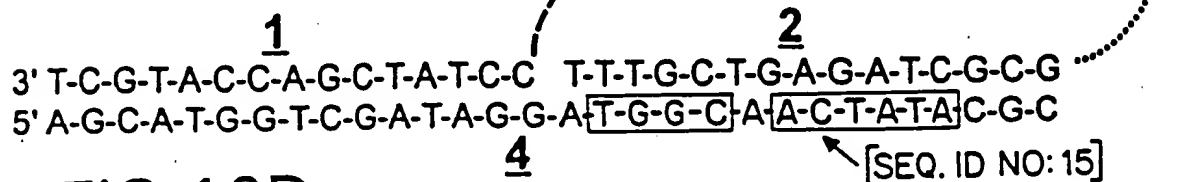


FIG. 12D

Target - 6 bp

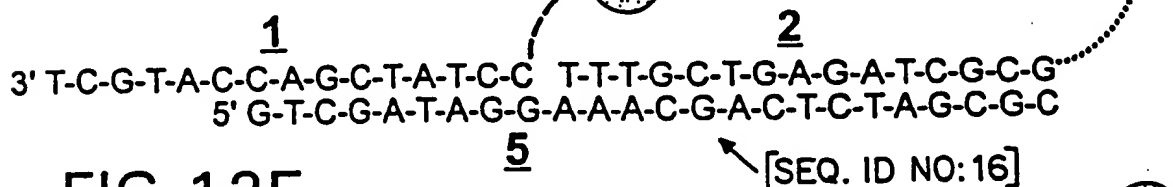


FIG. 12E

One bp Mismatch

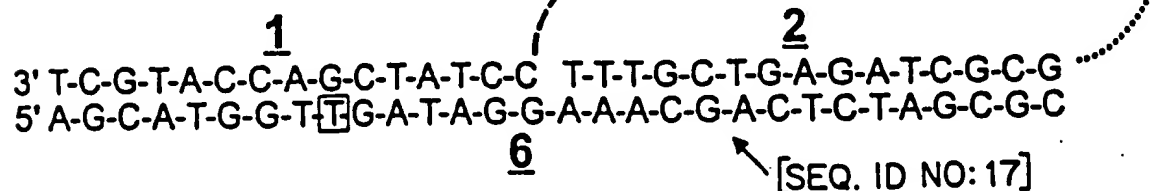


FIG. 12F

Two bp Mismatch

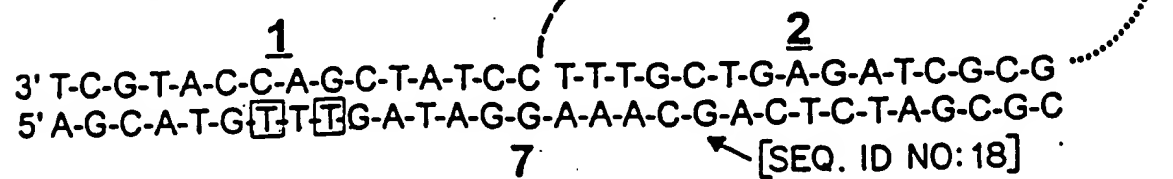
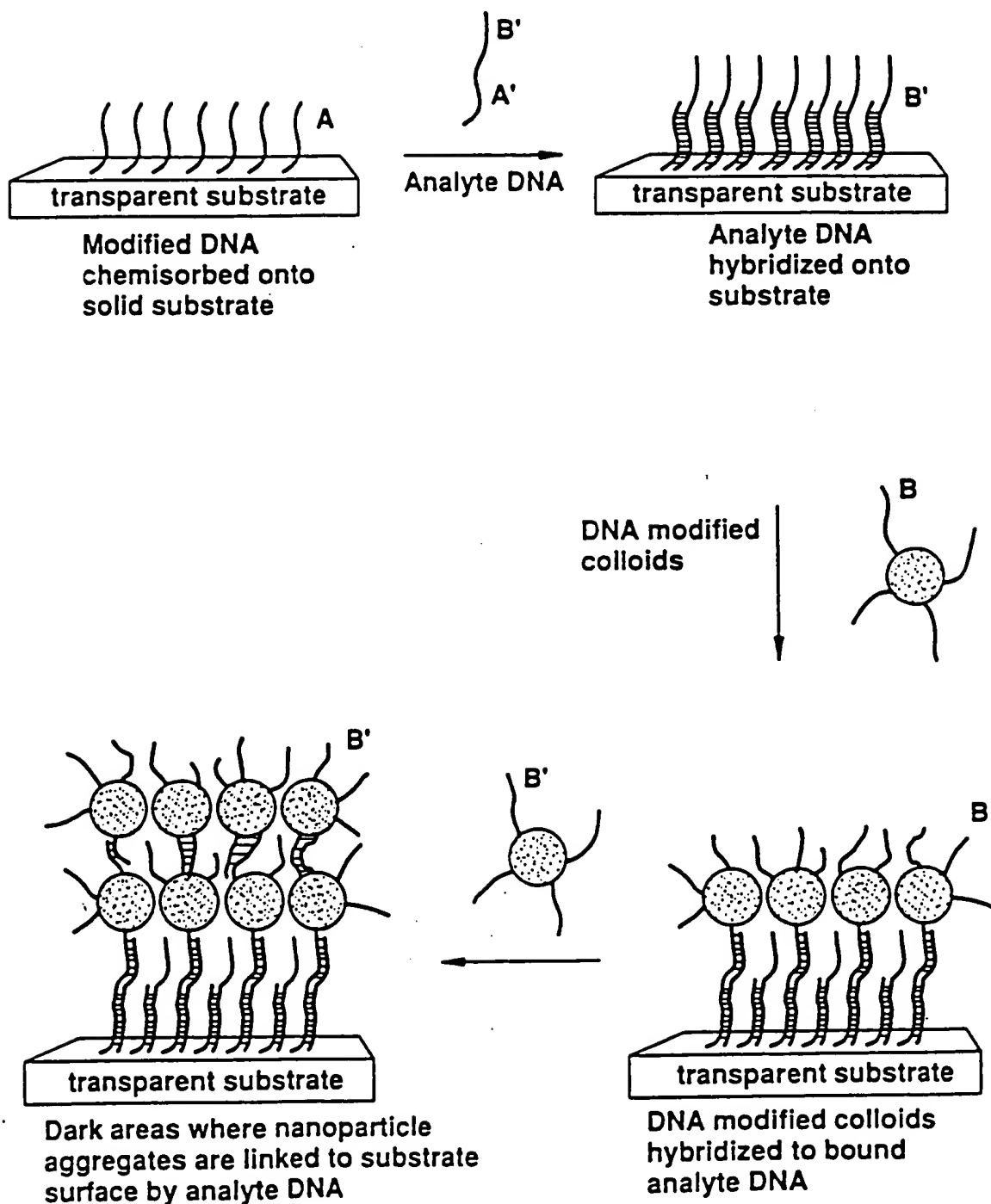


FIG.13A



09974007 "101001

FIG.13B

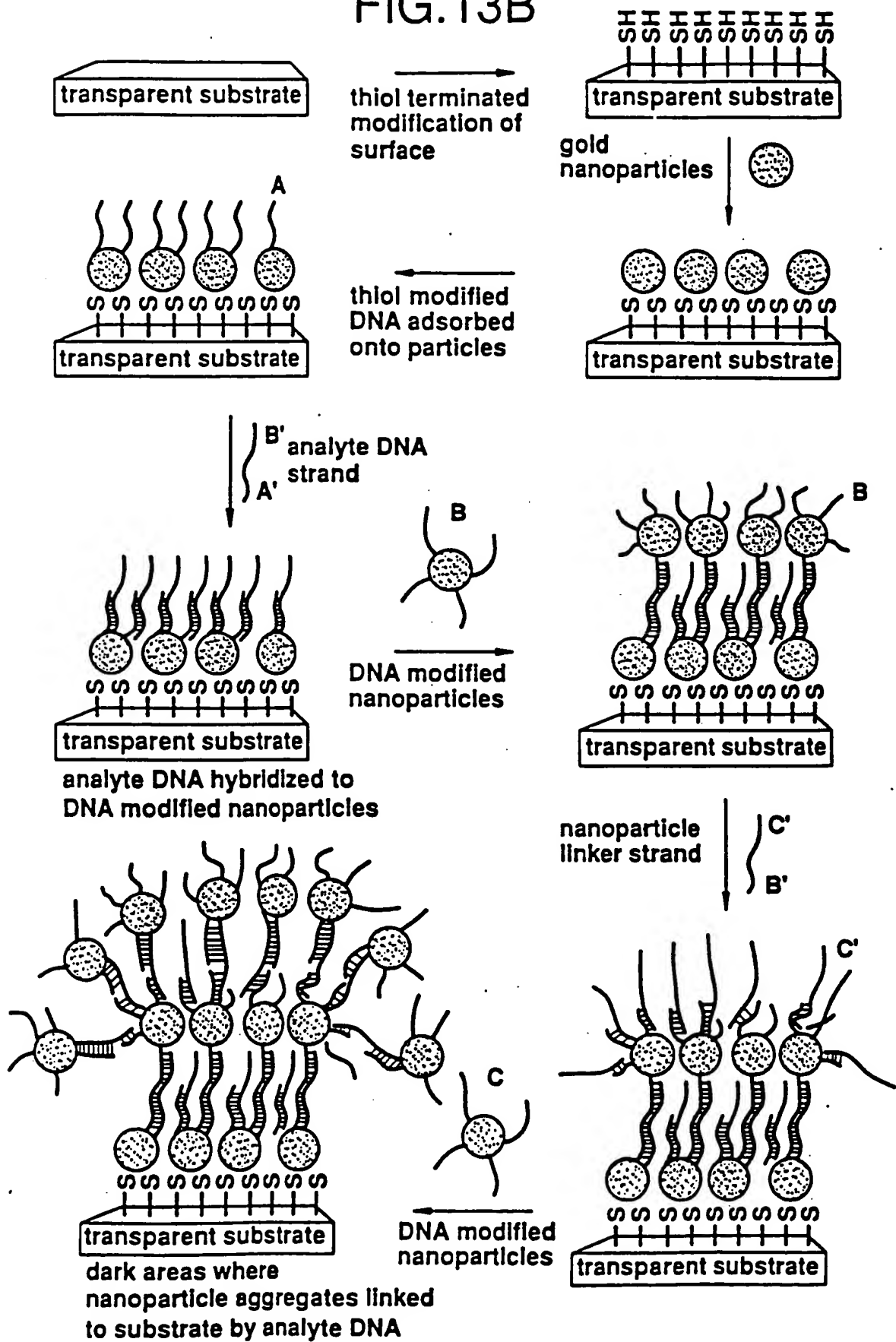


FIG.14A

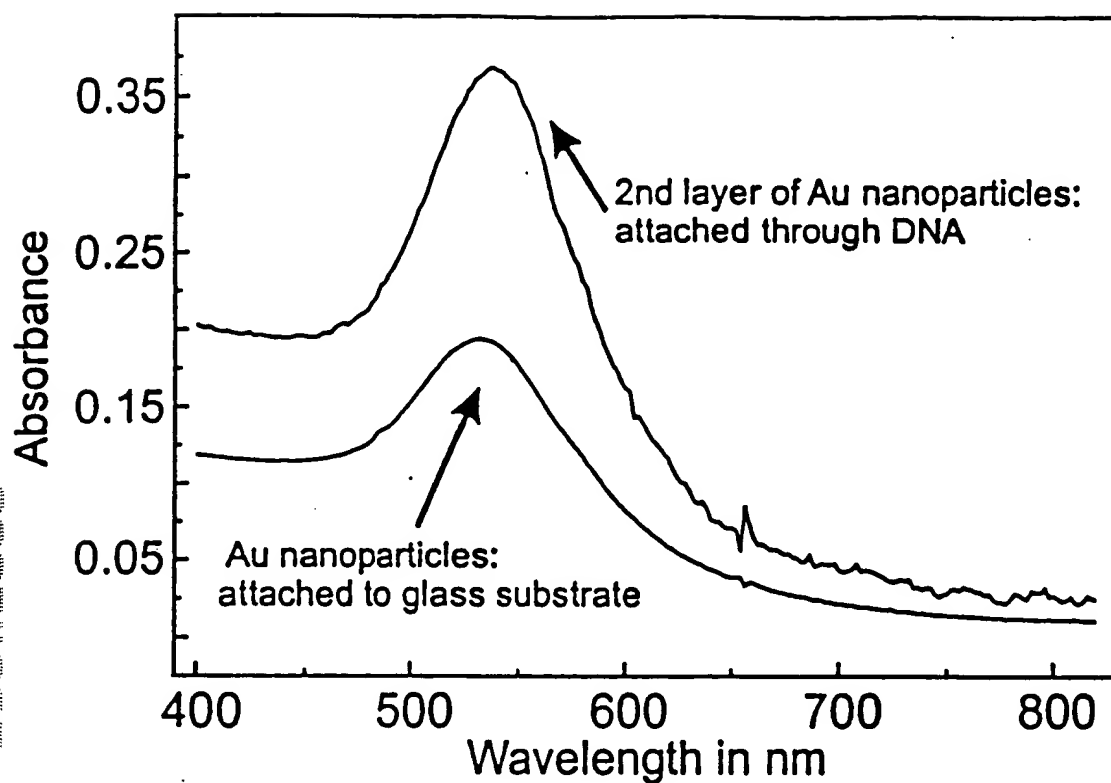


FIG.14B

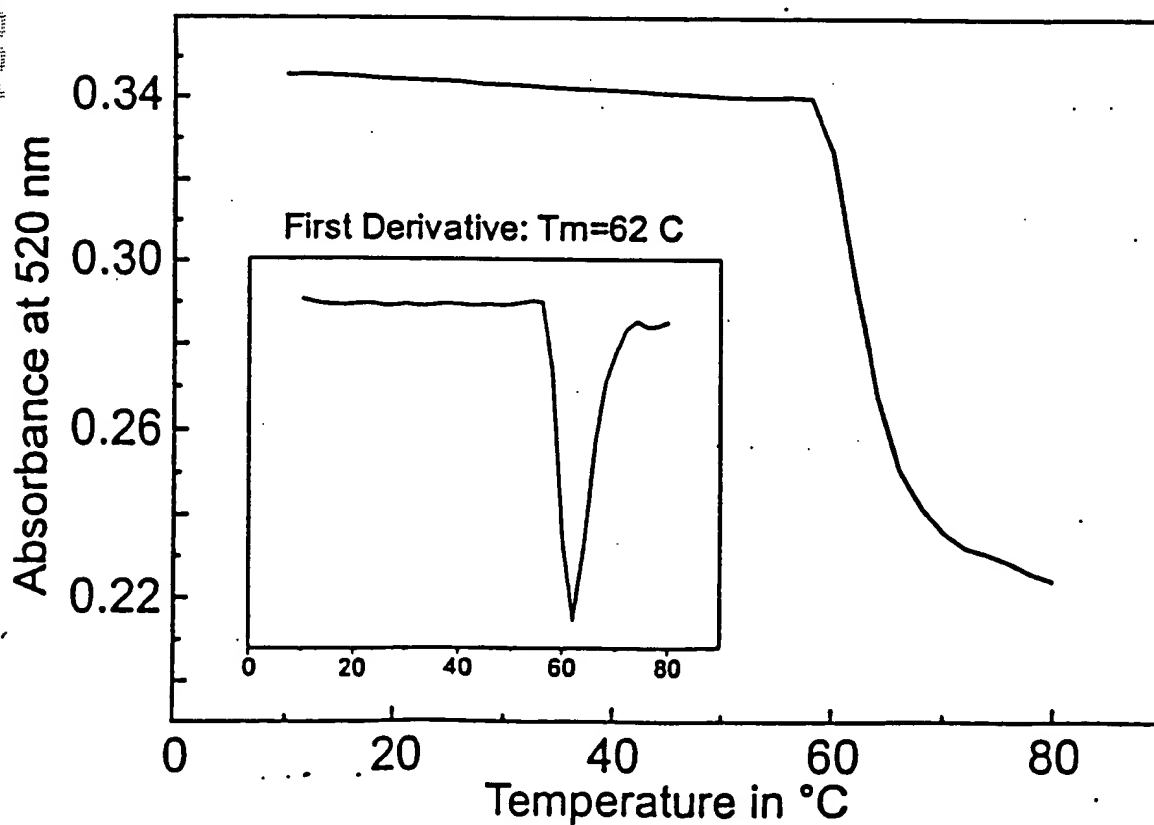


FIG15A

Probes with No Target

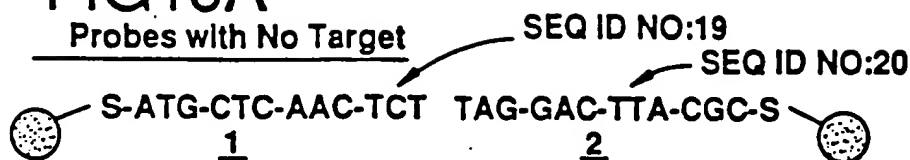


FIG15B

Half-Complementary Target

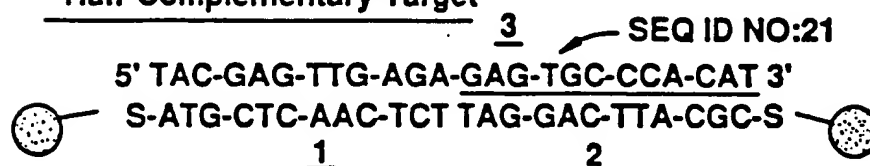


FIG15C

Complementary Target

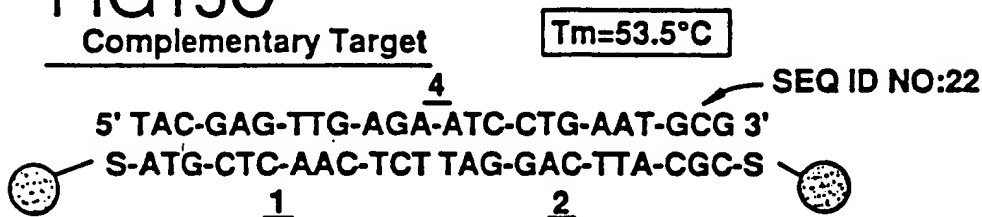


FIG15D

ONE Base-Pair Mismatch at Probe Head

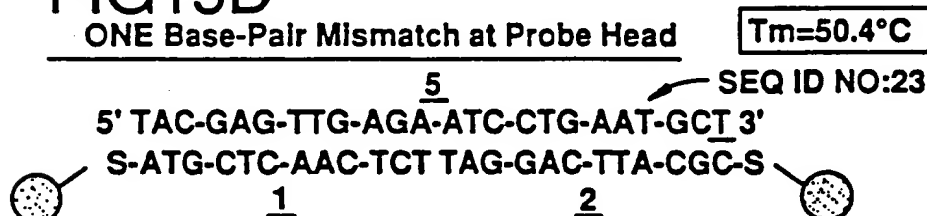


FIG15E

ONE Base-Pair Mismatch at Probe Tail

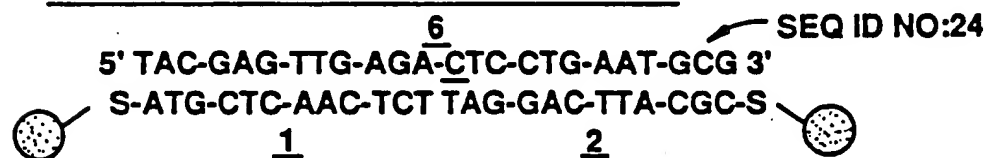


FIG15F

ONE Base Deletion

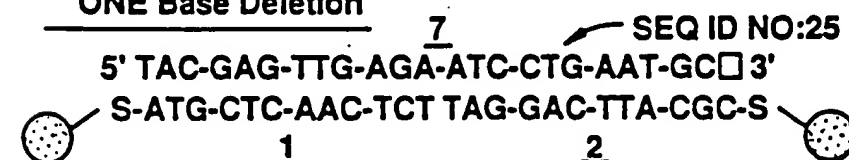


FIG15G

ONE Base-Pair Insertion

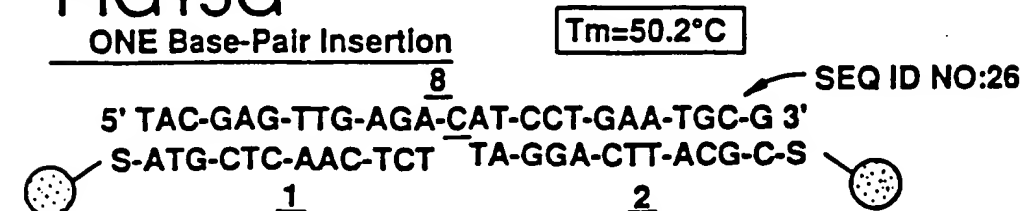


FIG. 16A

24 Base Template

5' TAC-GAG-TTG-AGA-ATC-CTG-AAT-GCG 3'
 —S-ATG-CTC-AAC-TCT TAG-GAC-TTA-CGC-S —

1

2

FIG. 16B

48 Base Template with Complementary 24 Base Filler

5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-ATC-CTG-AAT-GCG 3'
 —S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT TAG-GAC-TTA-CGC-S —

1

2

FIG. 16C

72 Base Template with Complementary 48 Base Filler

5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-TAT-ATT-GGA-CGC-TTT-ACG-GAC-AAC-ATC-CTG-AAT-GCG 3'
 —S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT-ATA-TAA-CCT-GCG-AAA-TGC-CTG-TTG TAG-GAC-TTA-CGC-S —

1

2

FIG. 17A

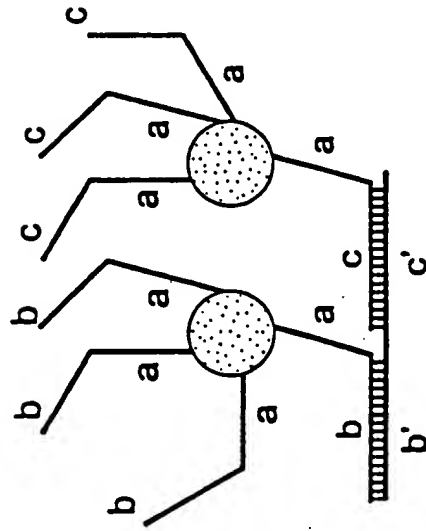


FIG. 17B

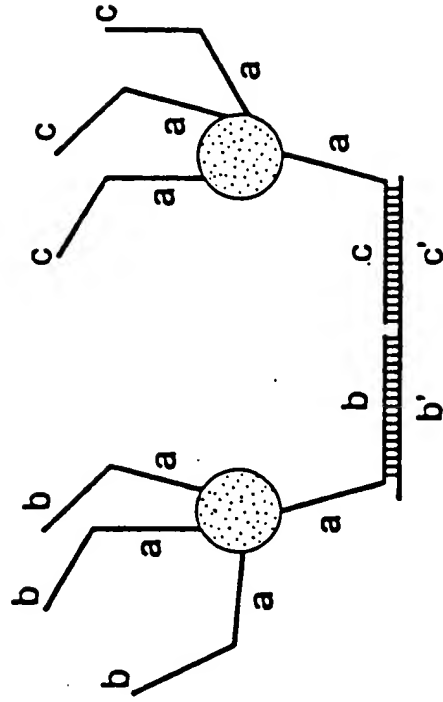


FIG. 17C

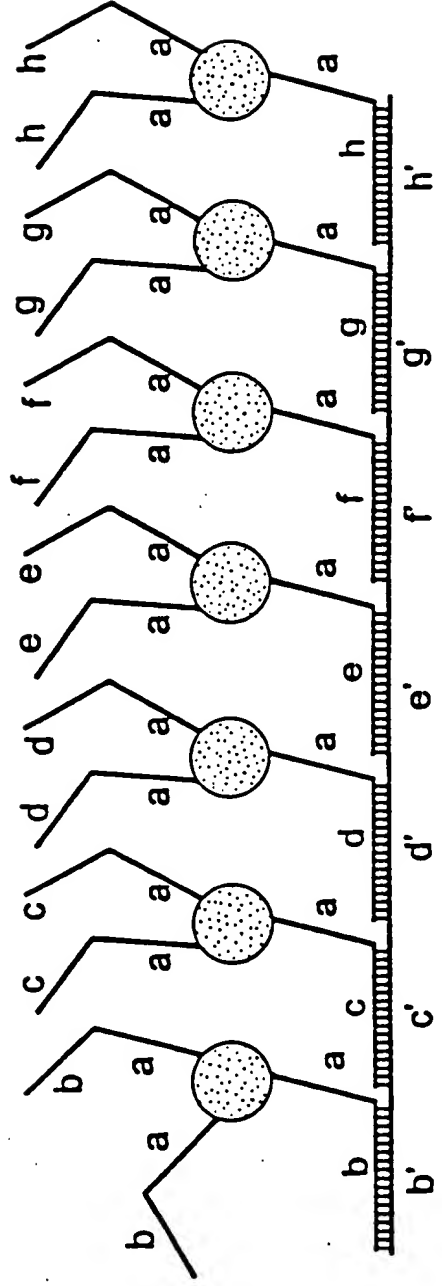


FIG. 17D

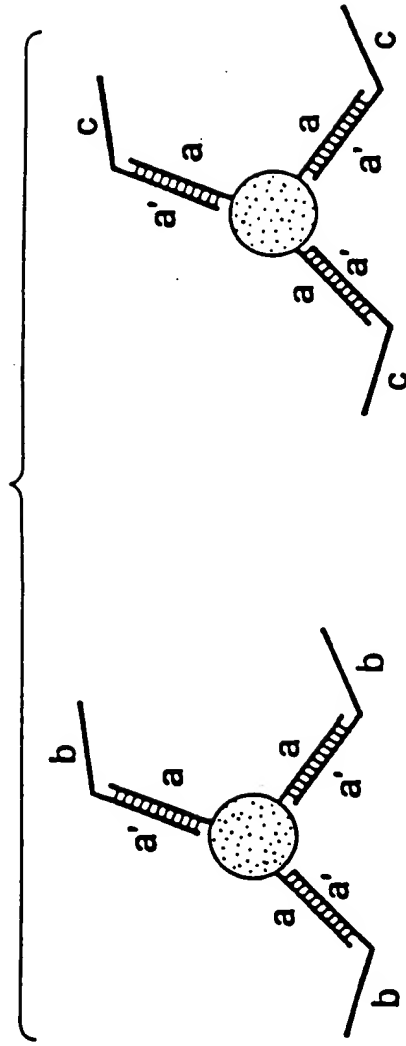


FIG. 17E

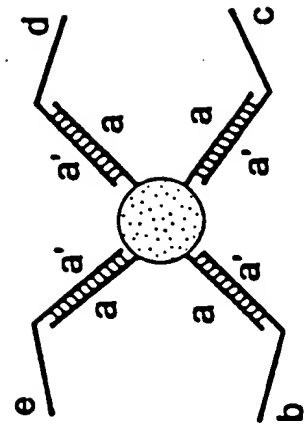


FIG.18

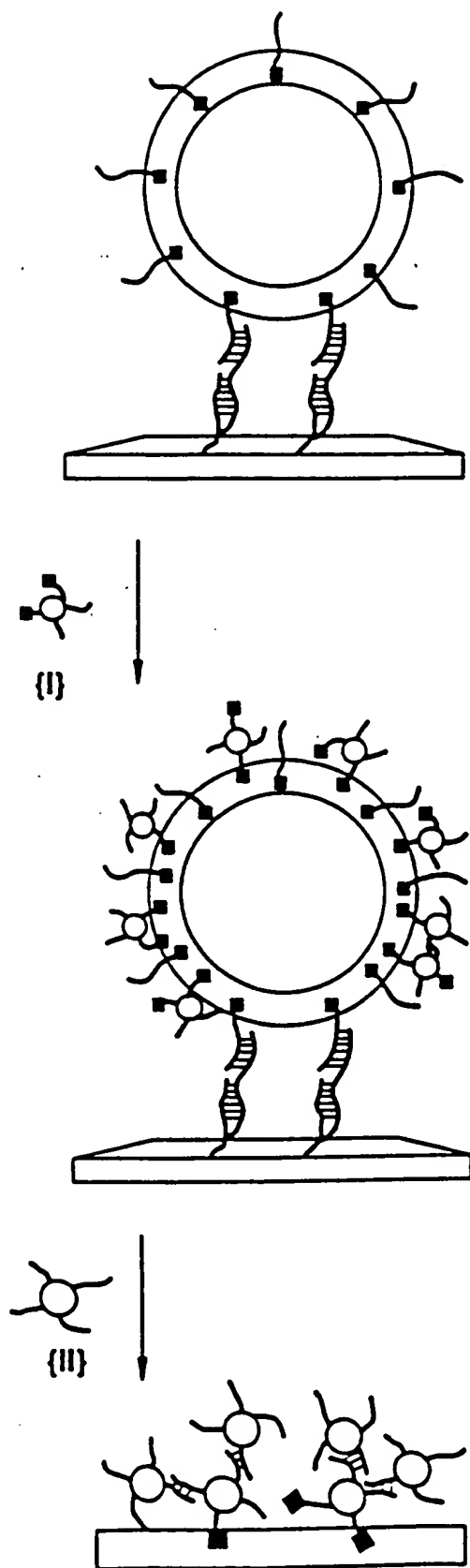


FIG.19A

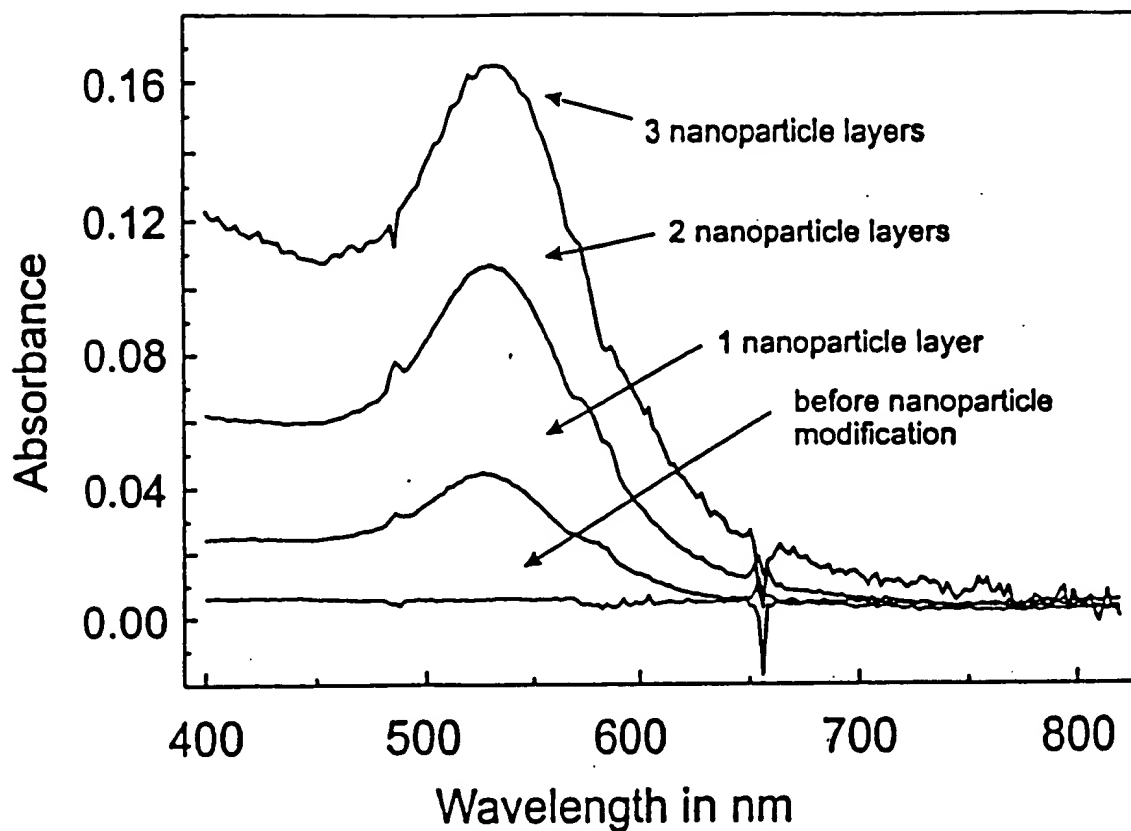


FIG.19B

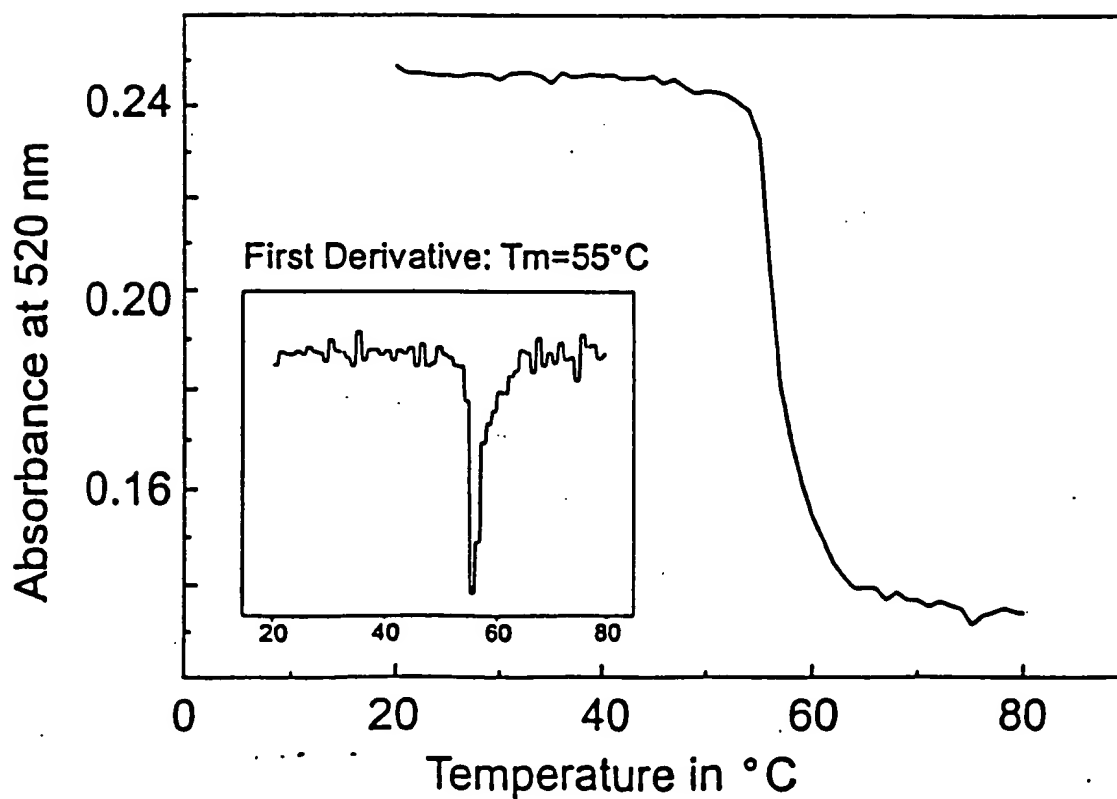


FIG.20A

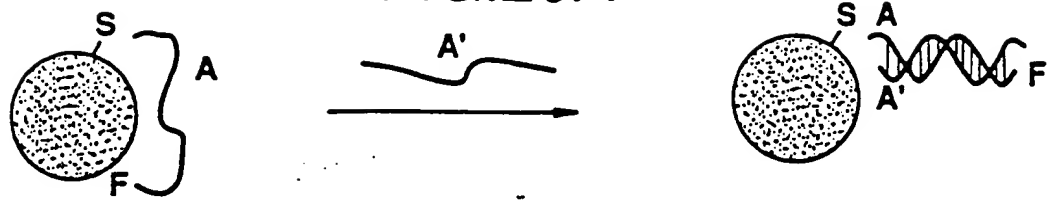
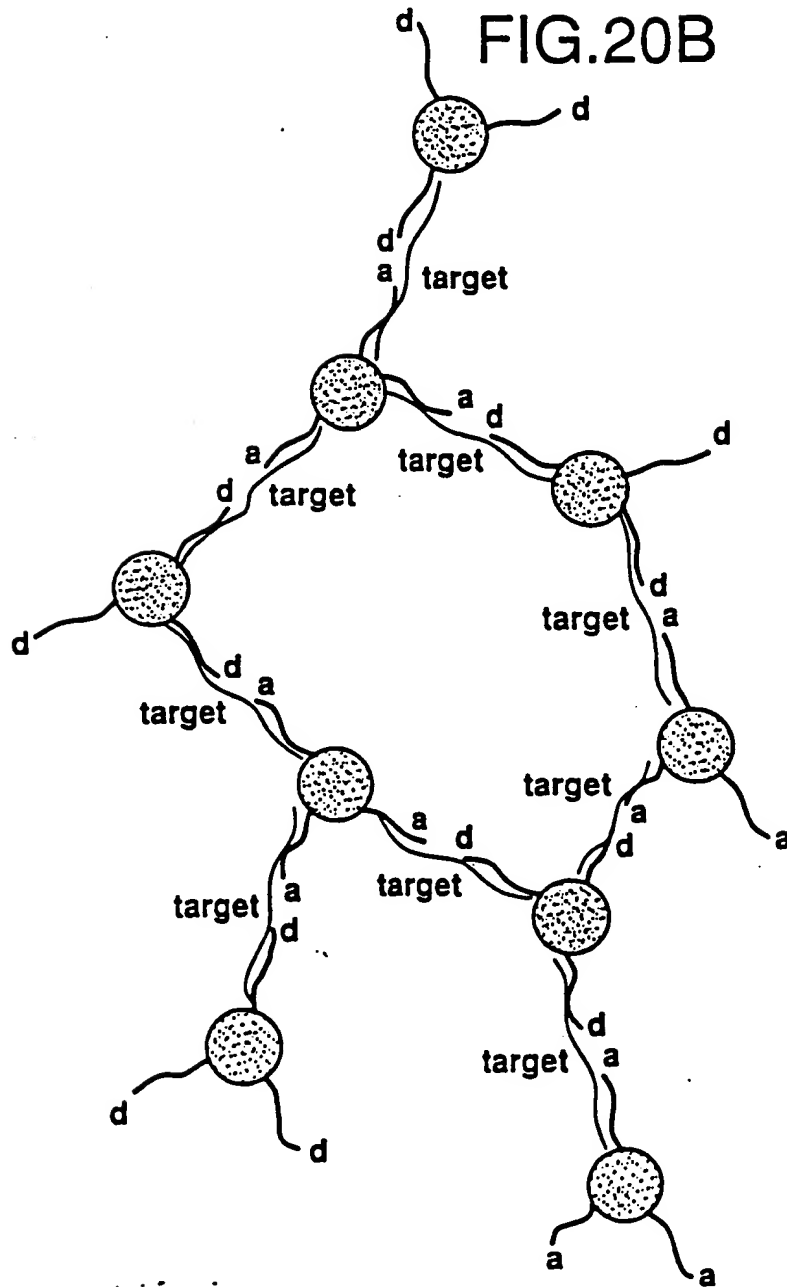
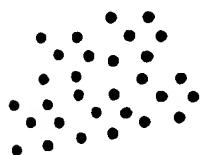


FIG.20B

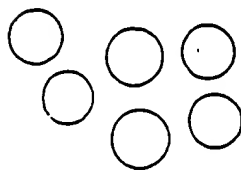


Oligonucleotide
modified Au
nanoparticle probes



Red

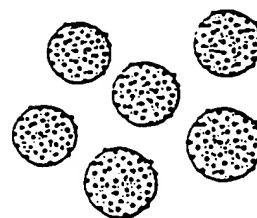
Fluorophore labeled
oligonucleotide modified
latex probes



White/Fluorescent

Target
Oligonucleotide

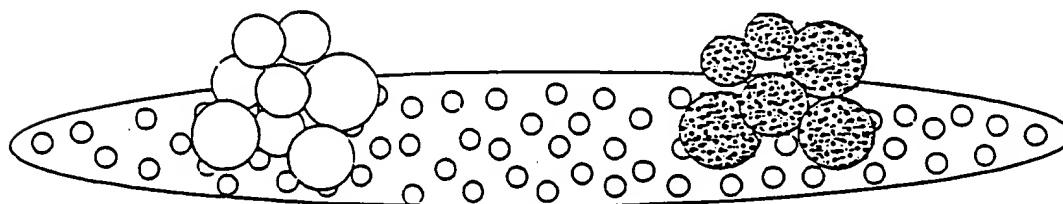
Au/Latex hybrid



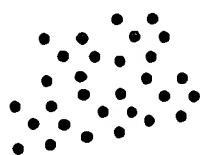
Pink/Non-fluorescent

No Target
Oligonucleotide

Target
Oligonucleotide



All Au probes pass
through membrane

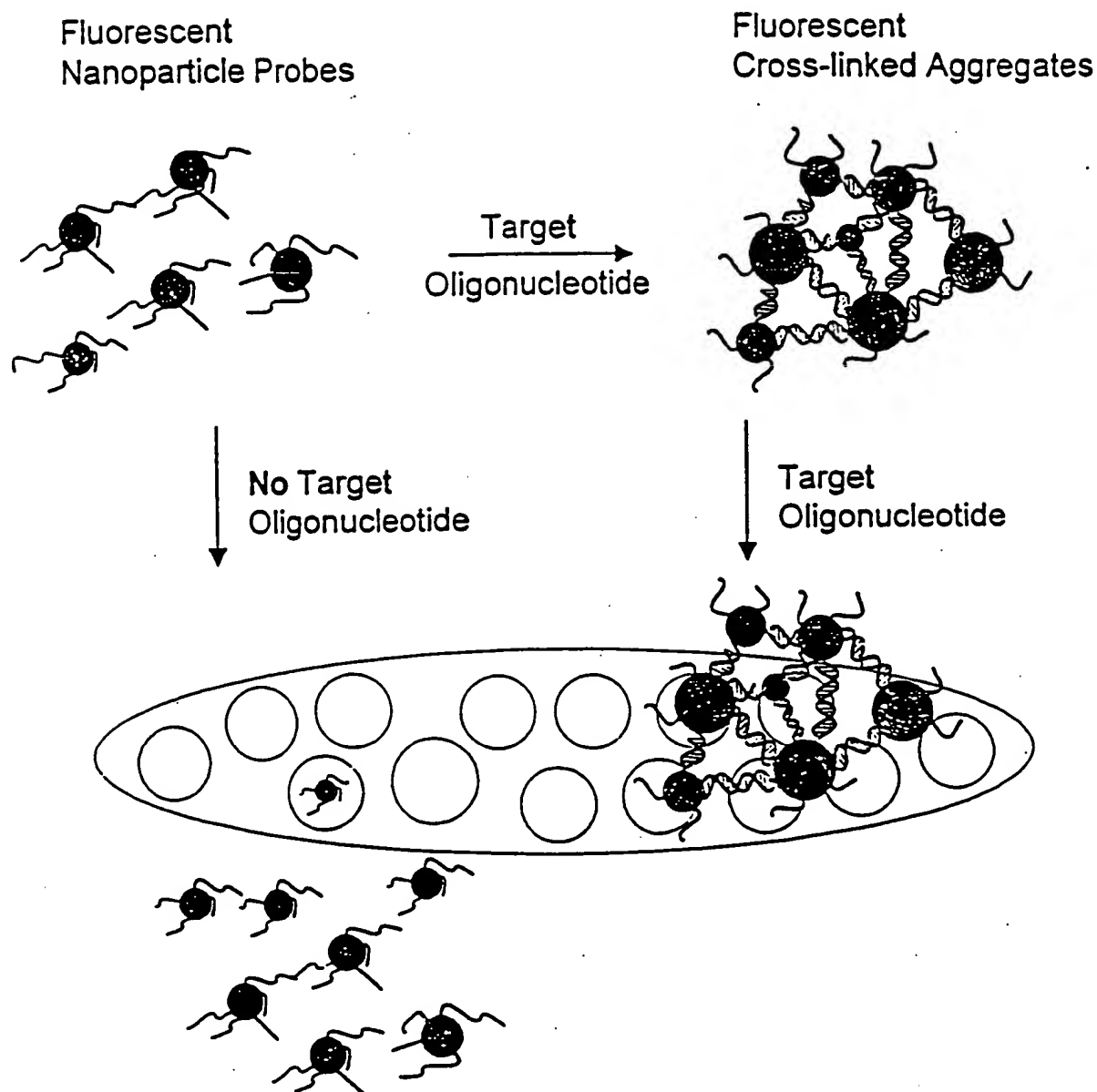


Excess Au probes
pass through
membrane



FIGURE 21

FIGURE 22



The fluorescent nanoparticle probes pass through the membrane

The fluorescent cross-linked aggregates are retained by the membrane

Anthrax PCR Product

5'G GCG GAT GAG TCA GTA GTT AAG GAG GCT CAT AGA GAA GTA ATT AAT
3'C CGC CTA CTC AGT CAT CAA TTC CTC CGA GTA TCT CTT CAT TAA TTA

TCG TCA ACA GAG GGA TTA TTG TTA AAT ATT GAT AAG GAT ATA AGA AAA
AGC AGT TGT CTC CCT AAT AAC AAT TTA TAA CTA TTC CTA TAT TCT TTT

ATA TTA TCC AGG GTT ATA TTG TAG AAA TTG AAG ATA CTG AAG GGC TT 3'
TAT AAT AGG TCC CAA TAT AAC ATC TTT AAC TTC TAT GAC TTC CCG AA 5'

141 mer Anthrax PCR product [SEQ ID NO: 36]

3' CTC CCT AAT AAC AAT
[SEQ ID NO: 37]

3' TTA TAA CTA TTC CTA
[SEQ ID NO: 38]

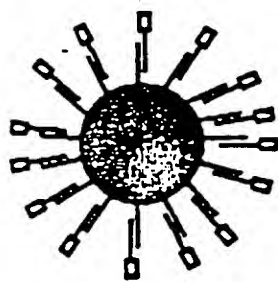
Oligonucleotide-Nanoparticle Probes

Blocker Oligonucleotides

3' C CGC CTA CTC AGT CAT CAA TTC CTC CGA GT	[SEQ ID NO: 39]
3' A TCT CTT CAT TAA TTA AGC AGT TGT	[SEQ ID NO: 40]
3' TAT TCT TTT TAT AAT AGG TCC CAA TAT	[SEQ ID NO: 41]
3' AAC ATC TTT AAC TTC TAT GAC TTC CCG AA	[SEQ ID NO: 42]

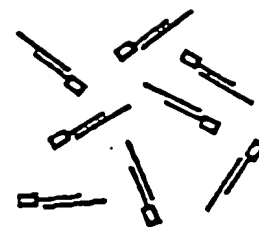
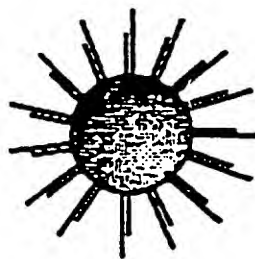
FIGURE 23

T03T0T 2004260



Satellite Probe

Target



Detection Signal

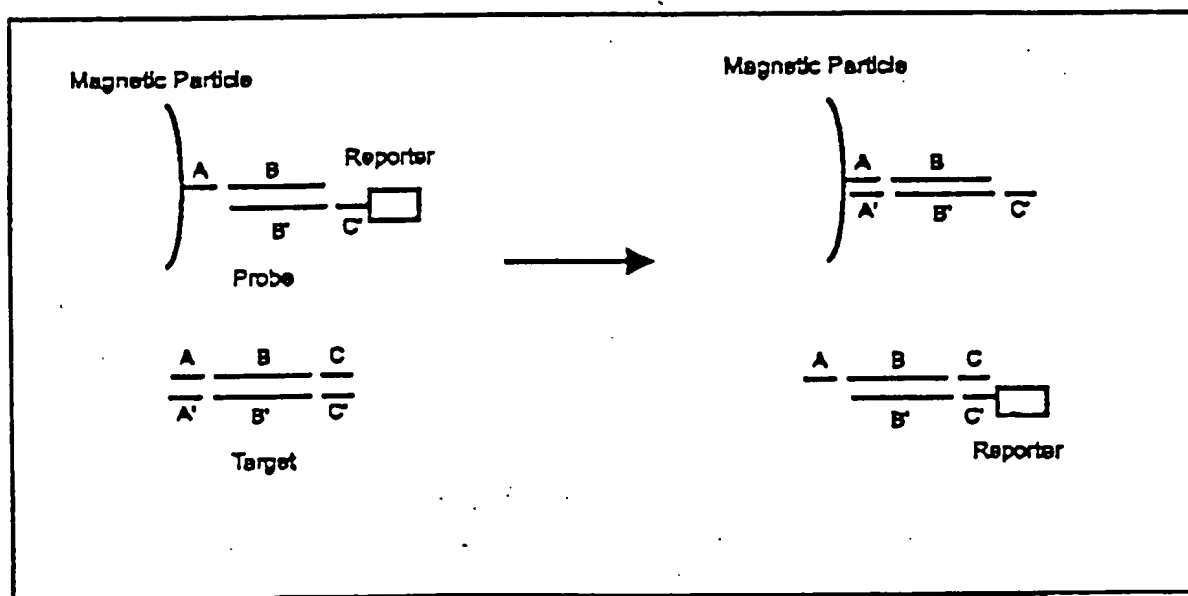


FIGURE 24

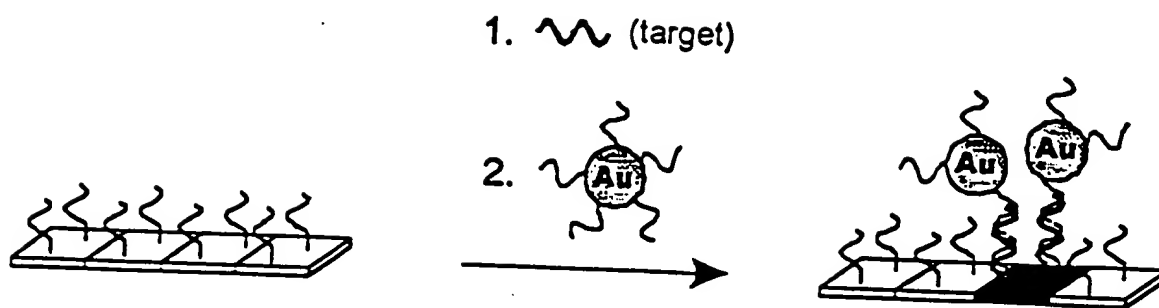


FIGURE 25A

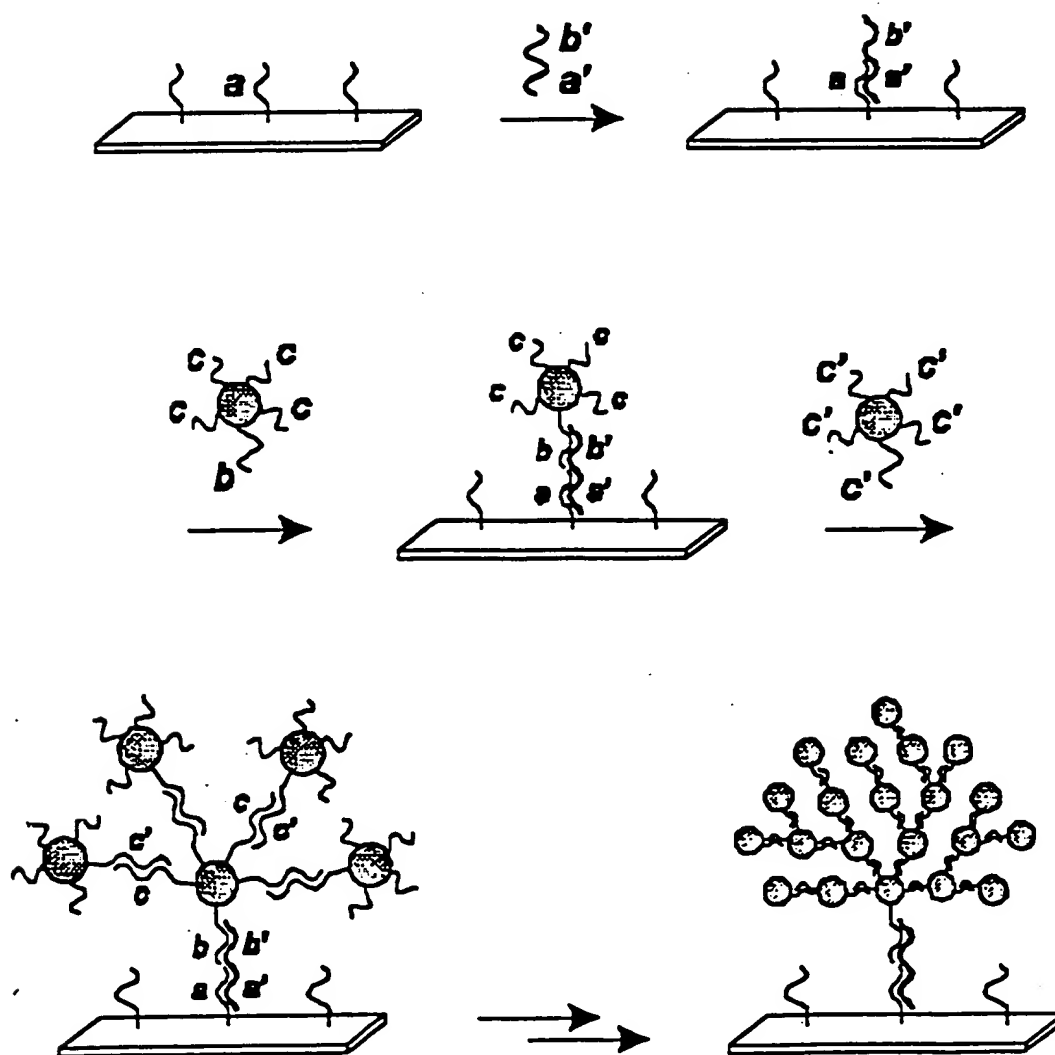
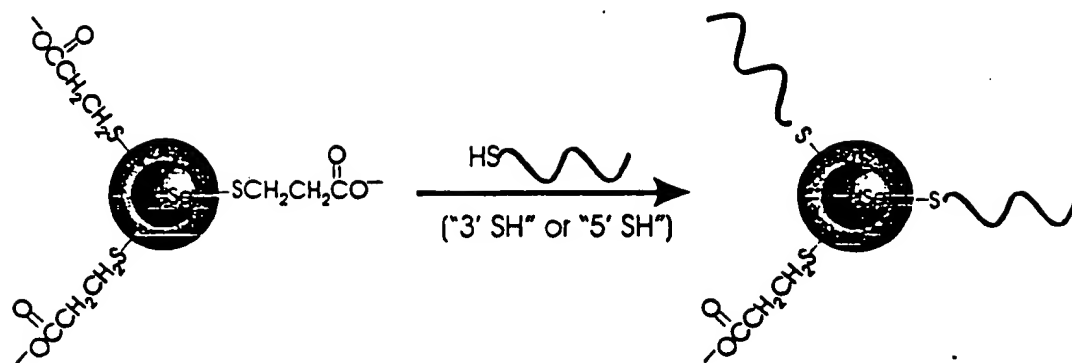


FIGURE 25B

A



B

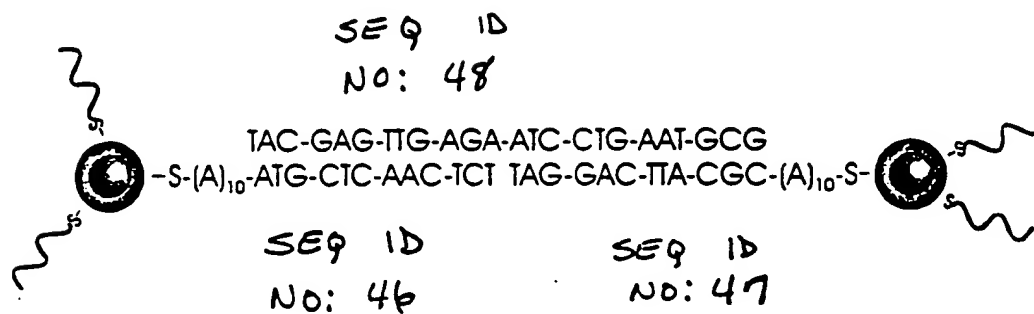


FIGURE 26

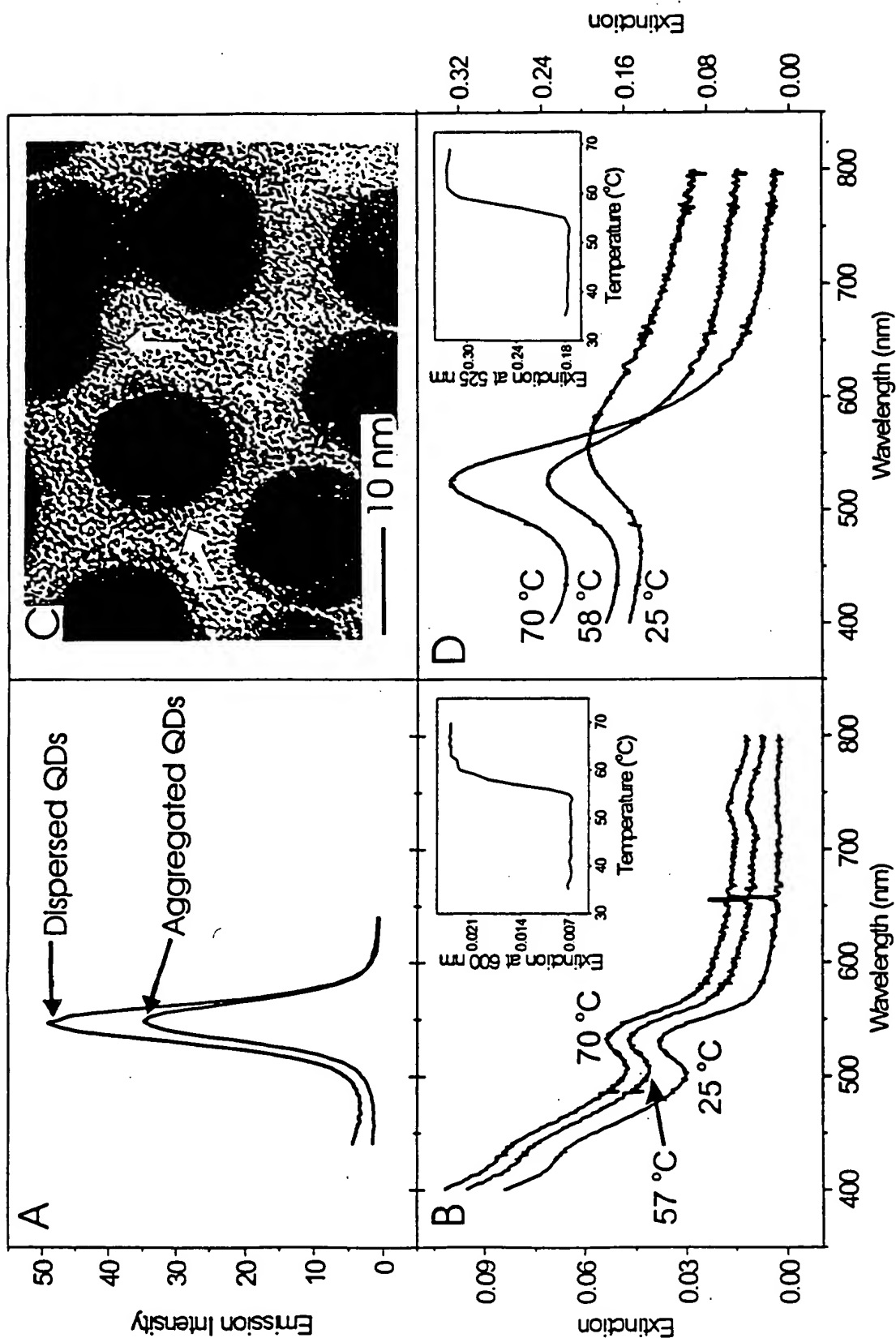


FIGURE 27

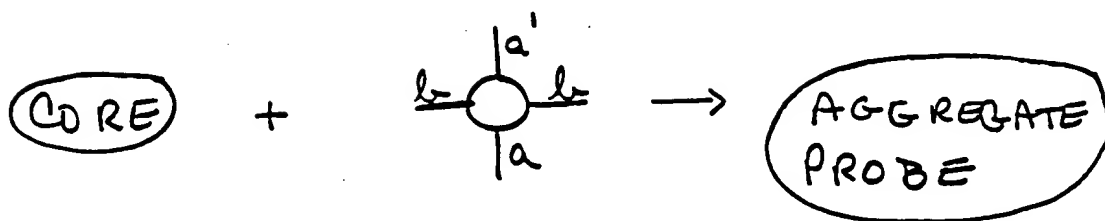
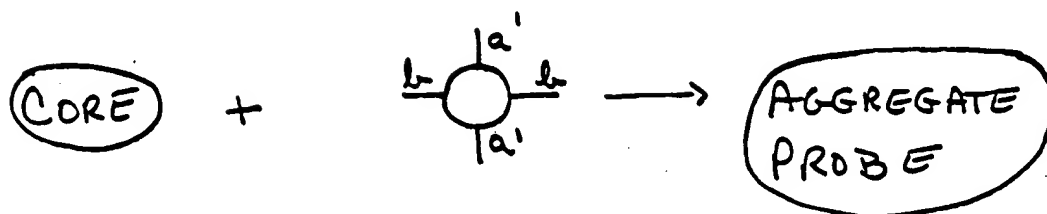
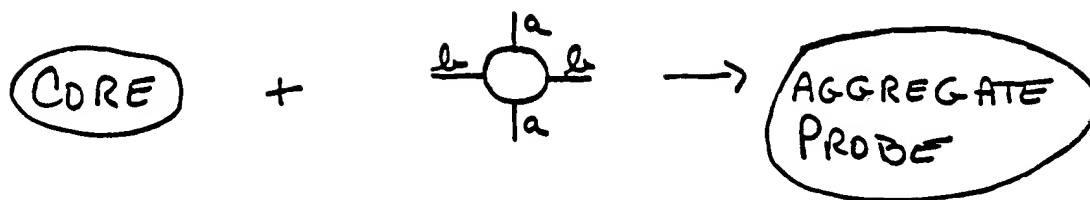
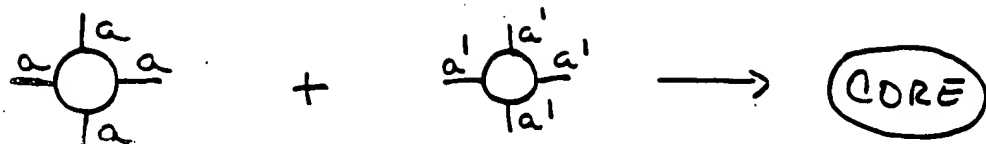
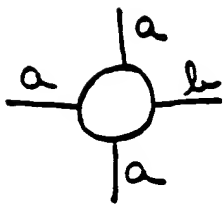
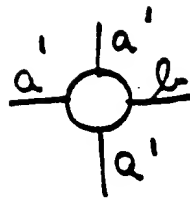


FIGURE 28A



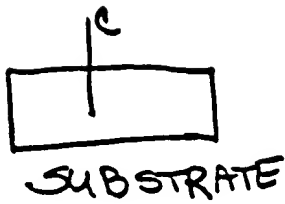
+



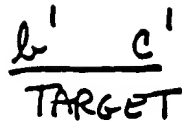
→

AGGREGATE
PROBE

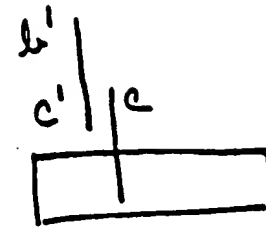
FIGURE 28B



+



→



↓

+ AGGREGATE
PROBE []

↓

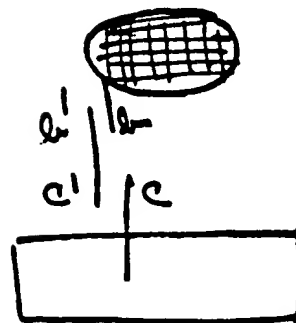


FIG. 28C

2007-04-04 10:40:00

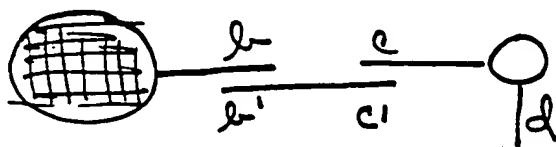
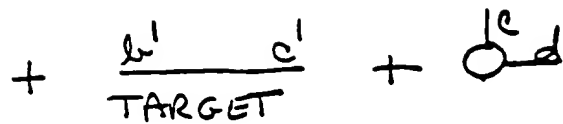
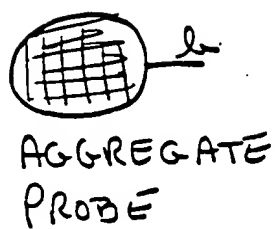
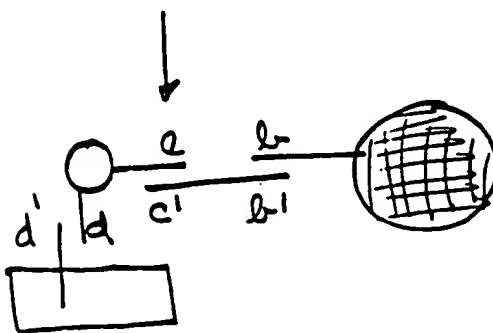
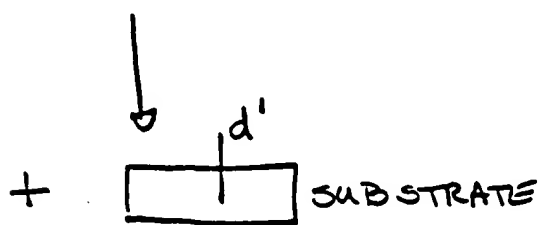


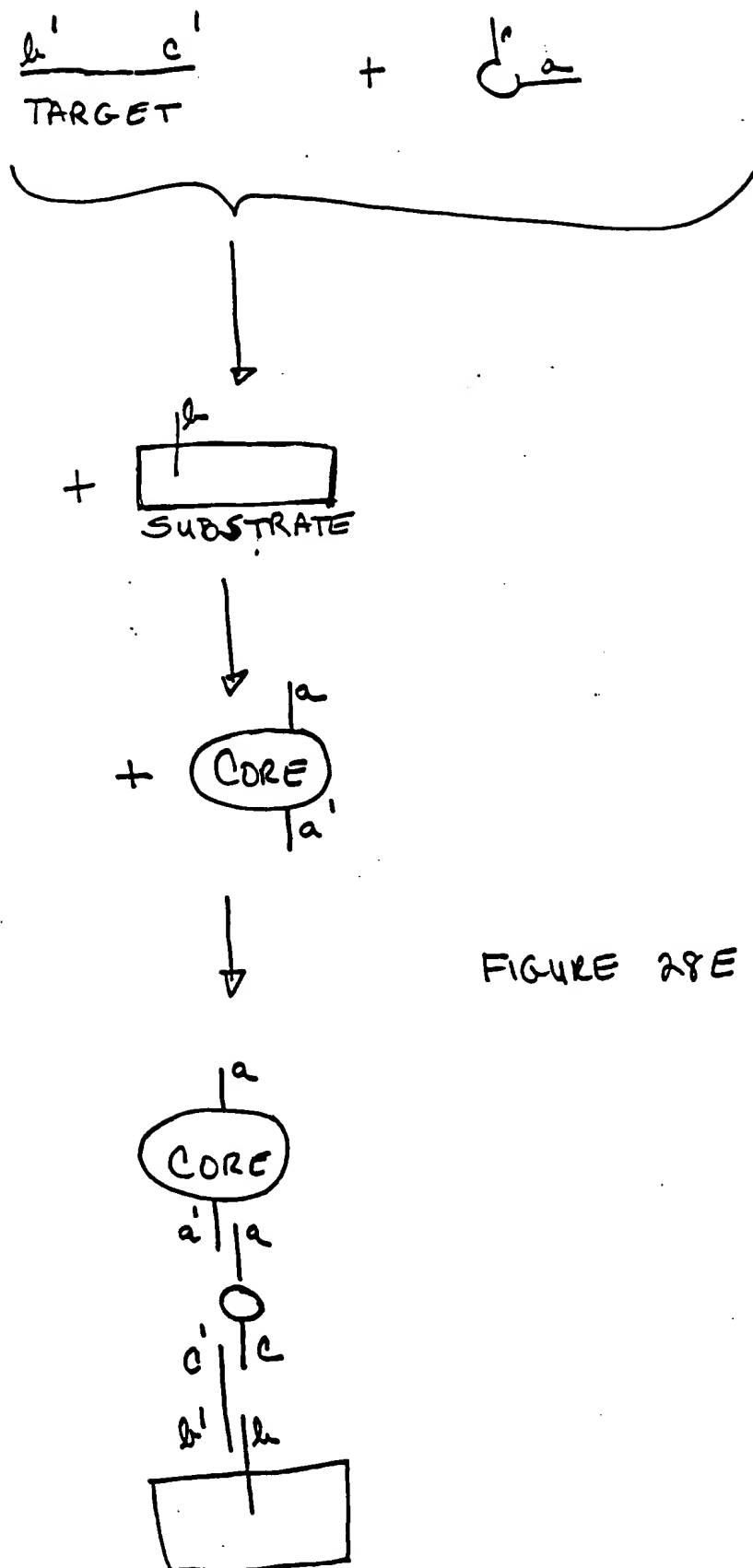
FIG. 29D

REMOVE EXCESS
BY CENTRIFUGATION



FOOT 20012550

TOP COVER



TOPOT-2004-250

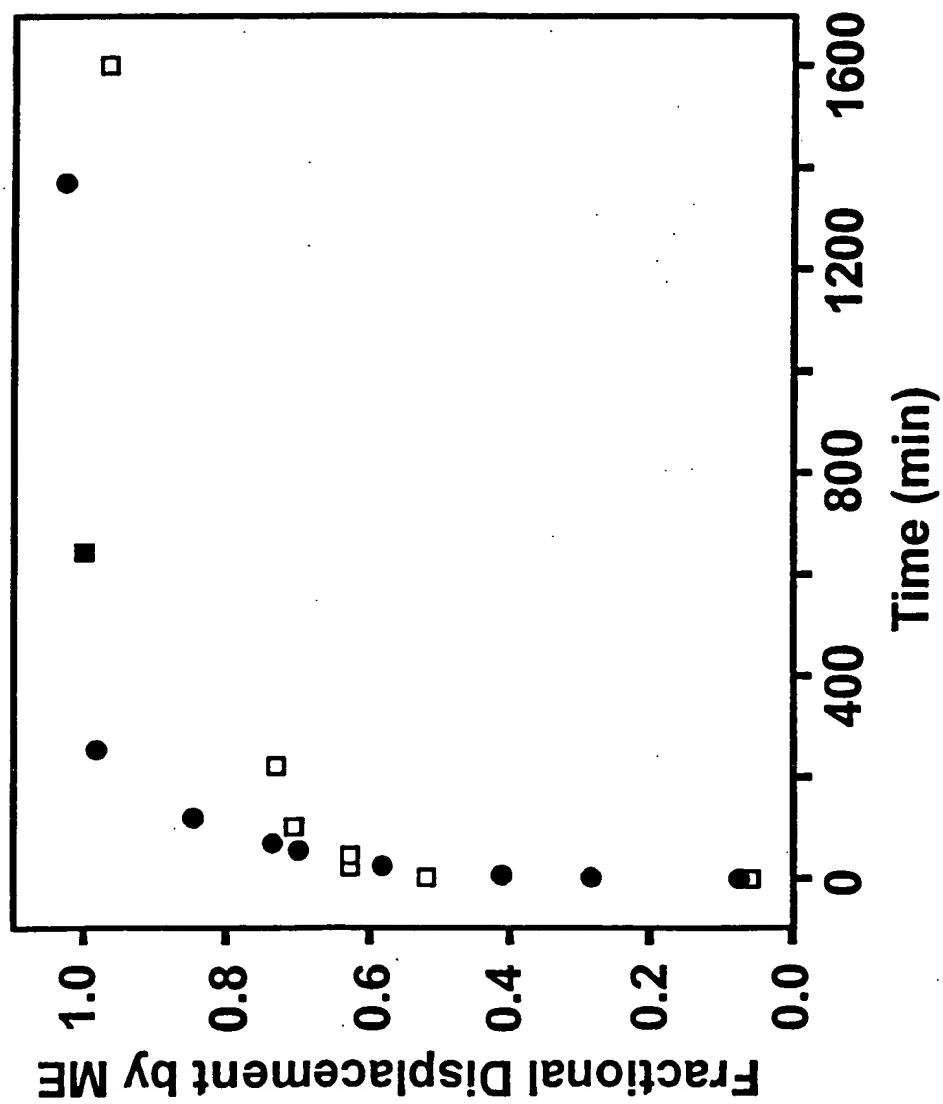


Figure 29

FOOT 20042660

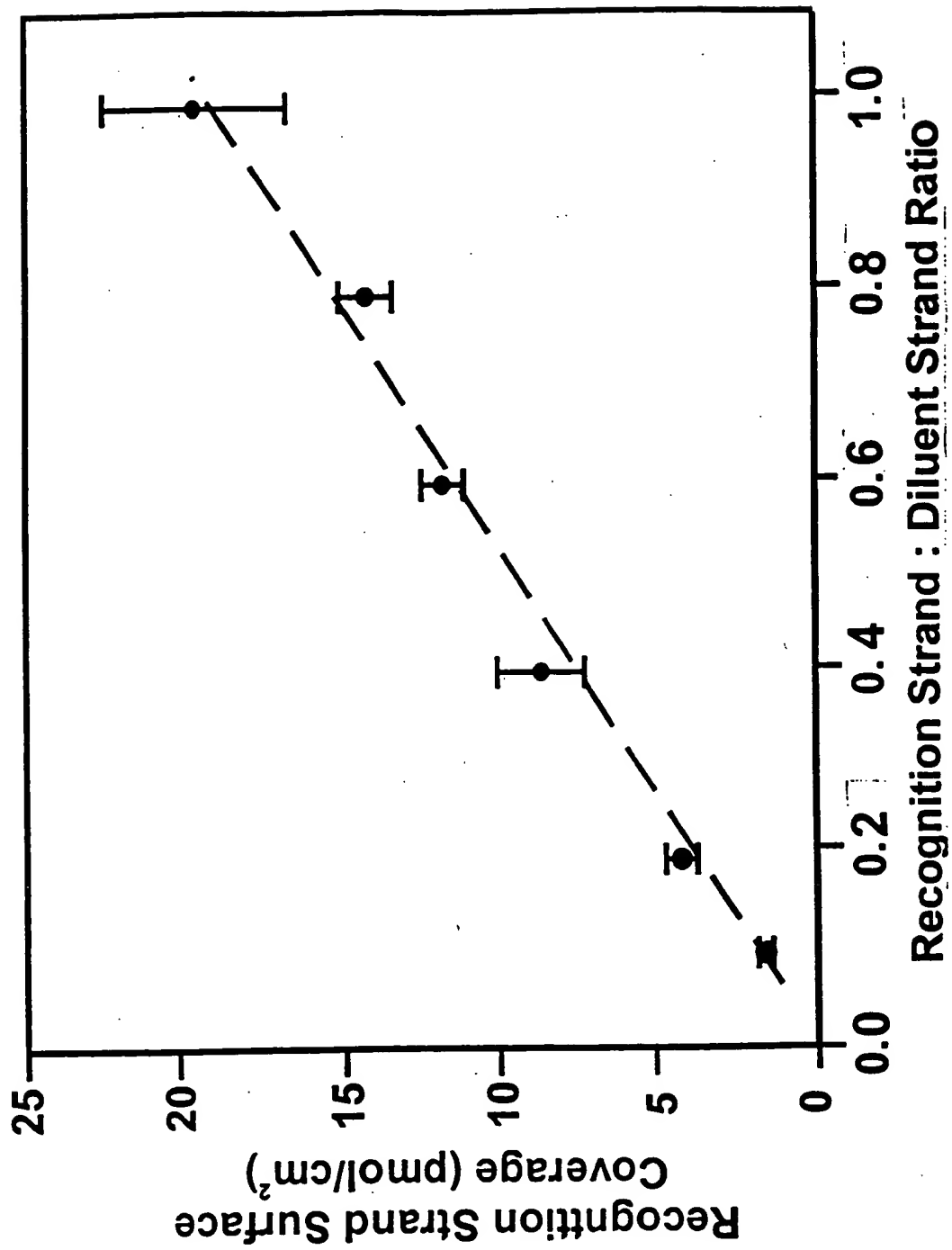


Figure 30

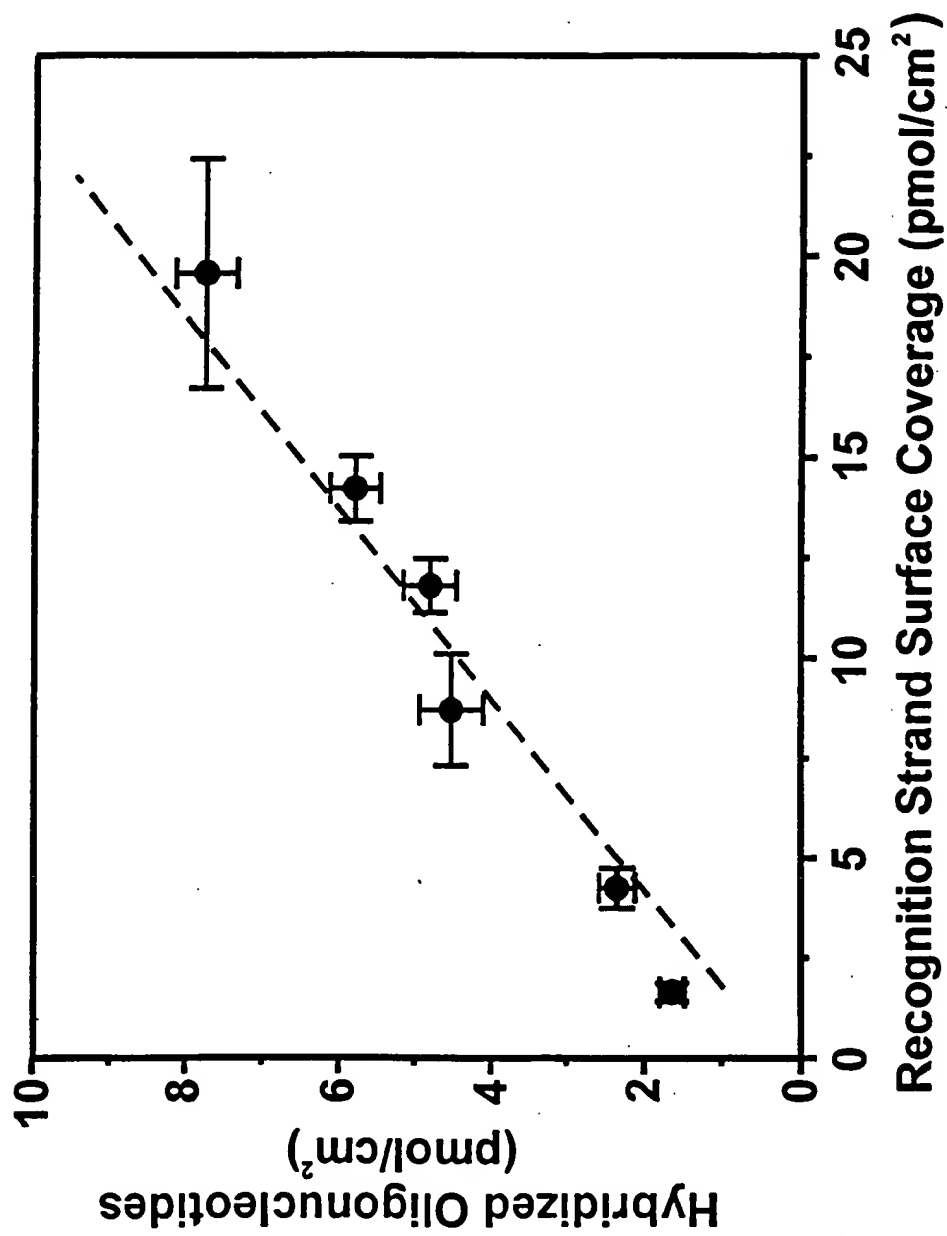


Figure 31

400707-20072660

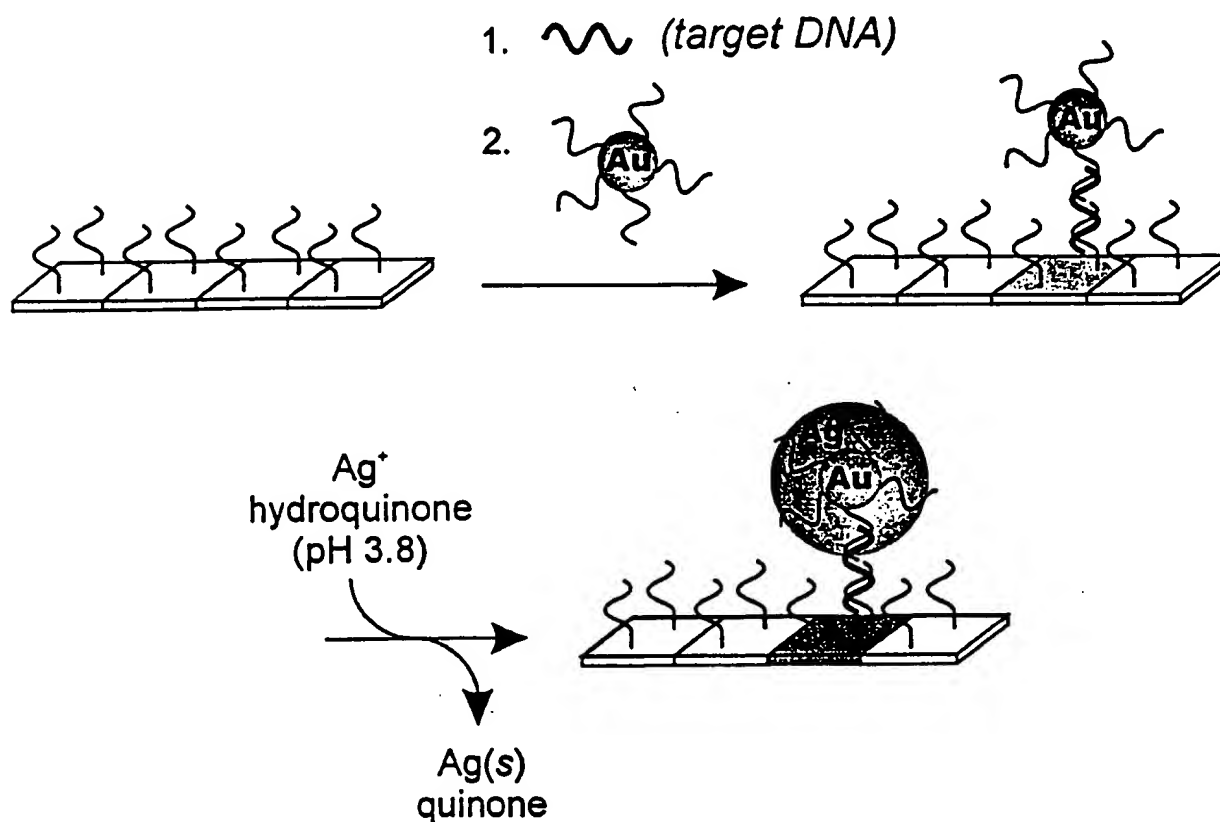
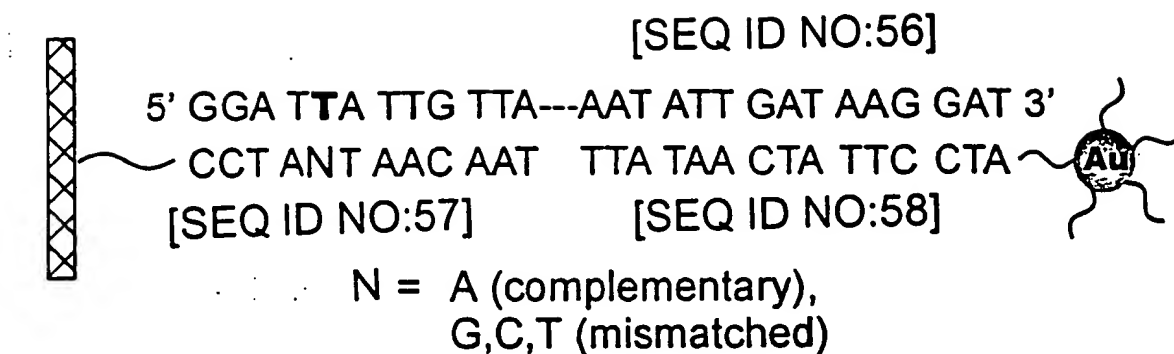


Figure 32

FOOT 20042660

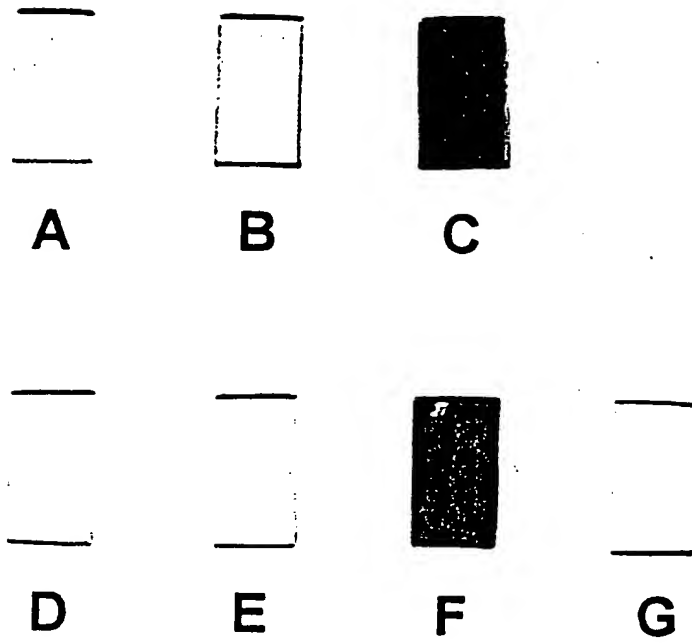


Figure 33

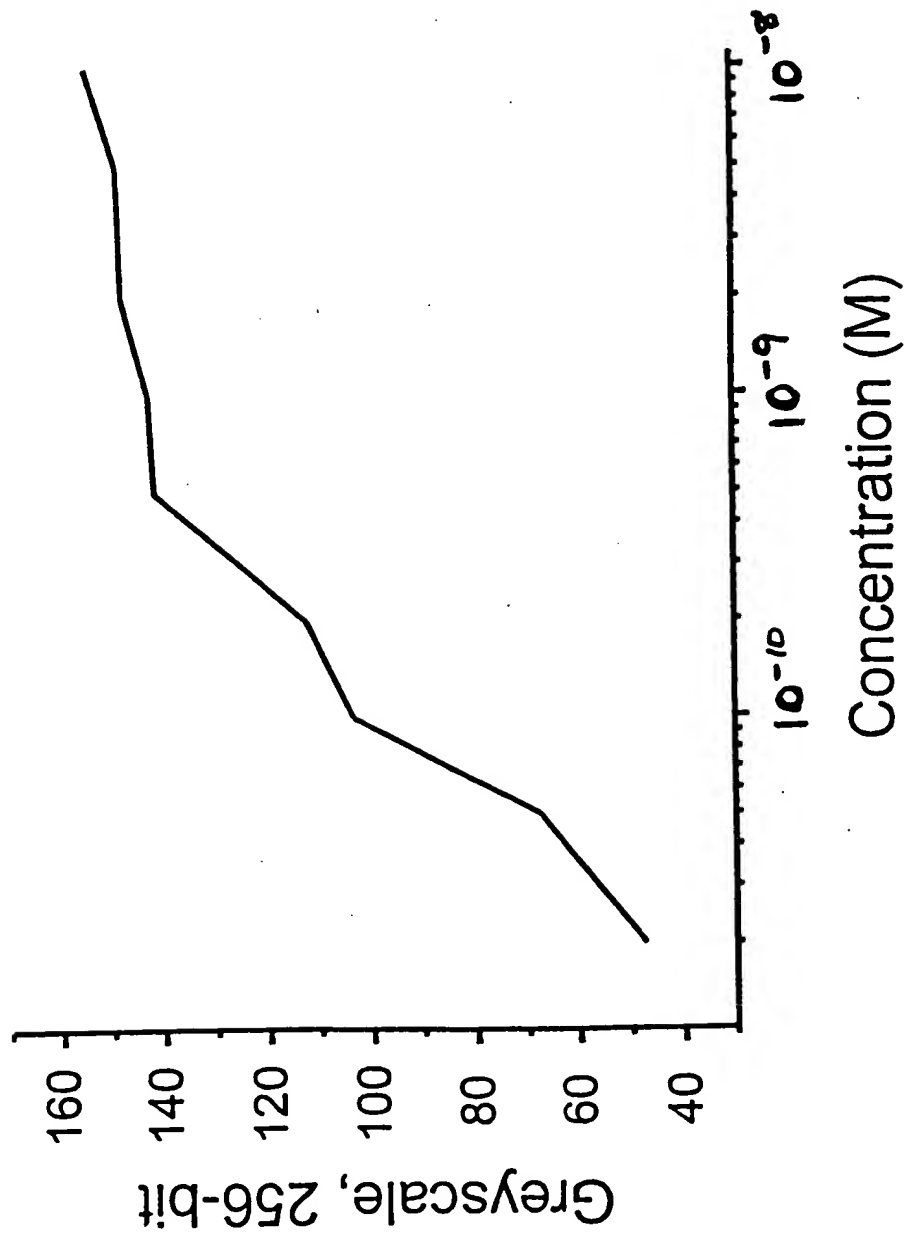


Figure 34

FOOT 2004260

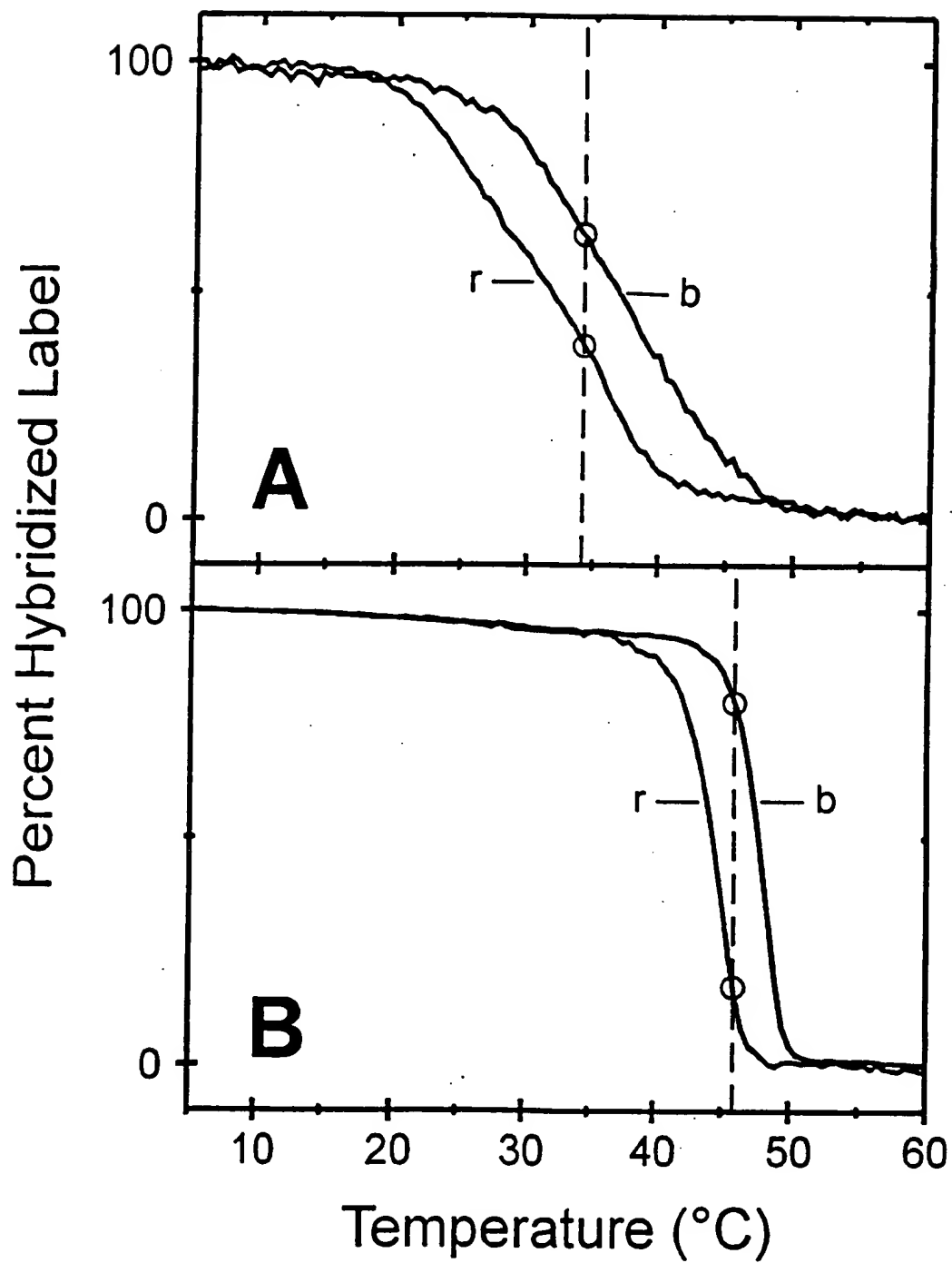


Figure 35

FOOTOT 20042660

FIG. 36A

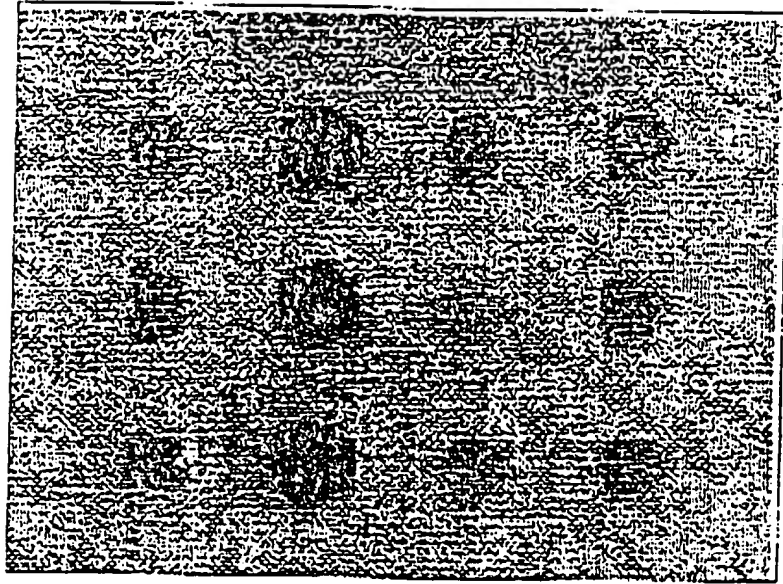
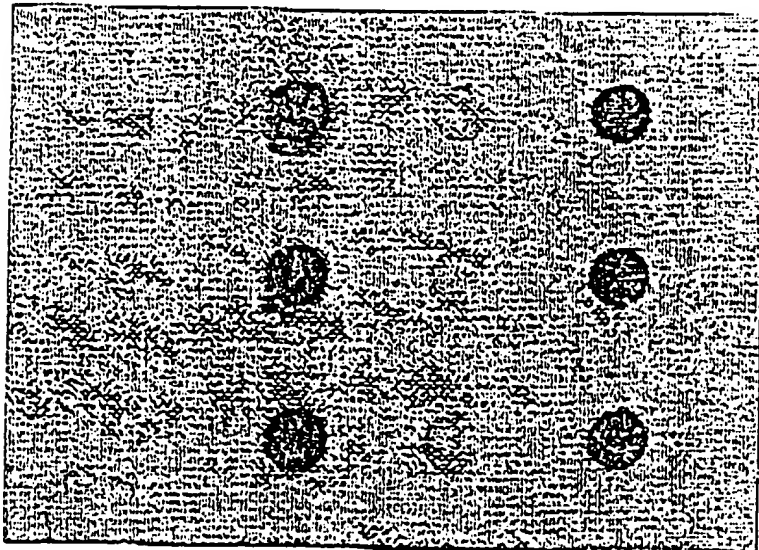
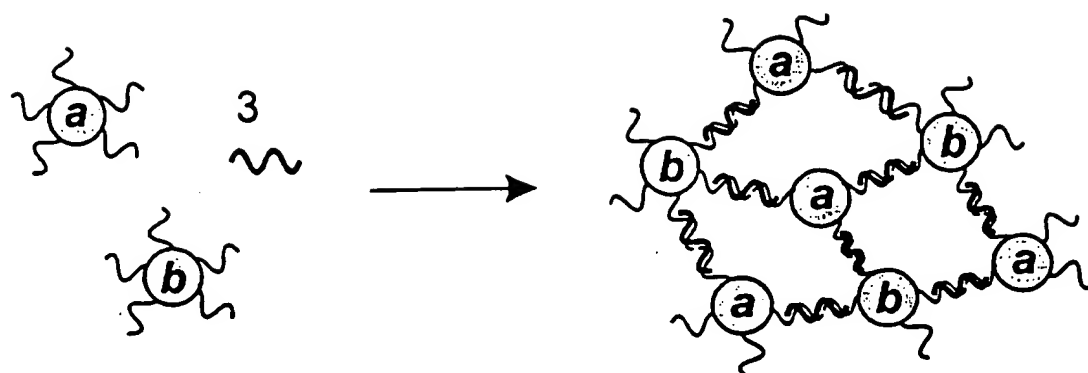


FIG. 36B



C A T G

A



B

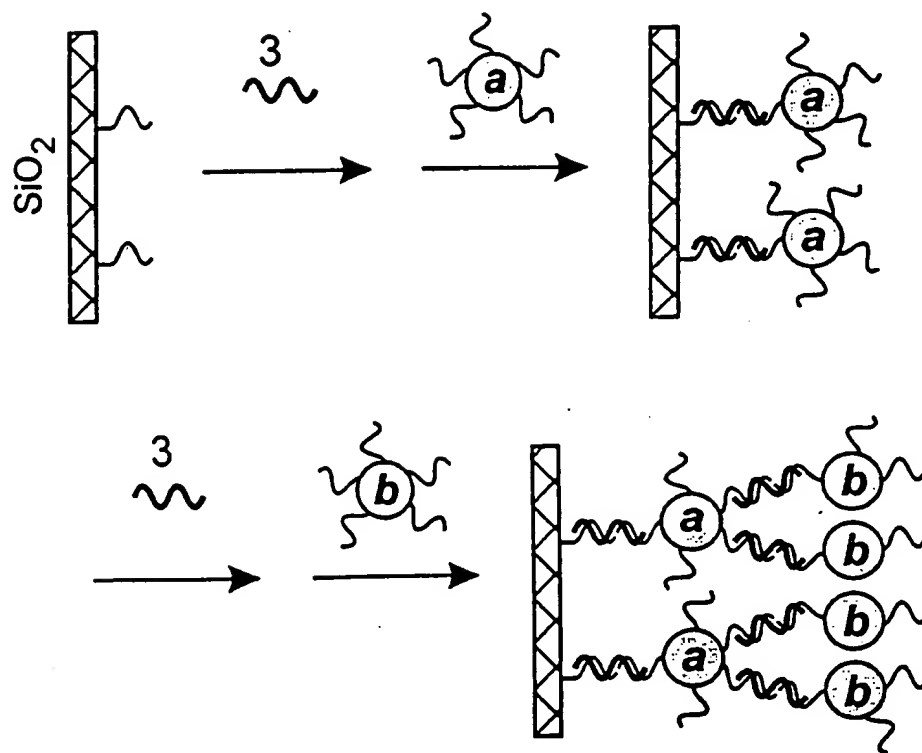


Figure 37

FOOT-2004-2660

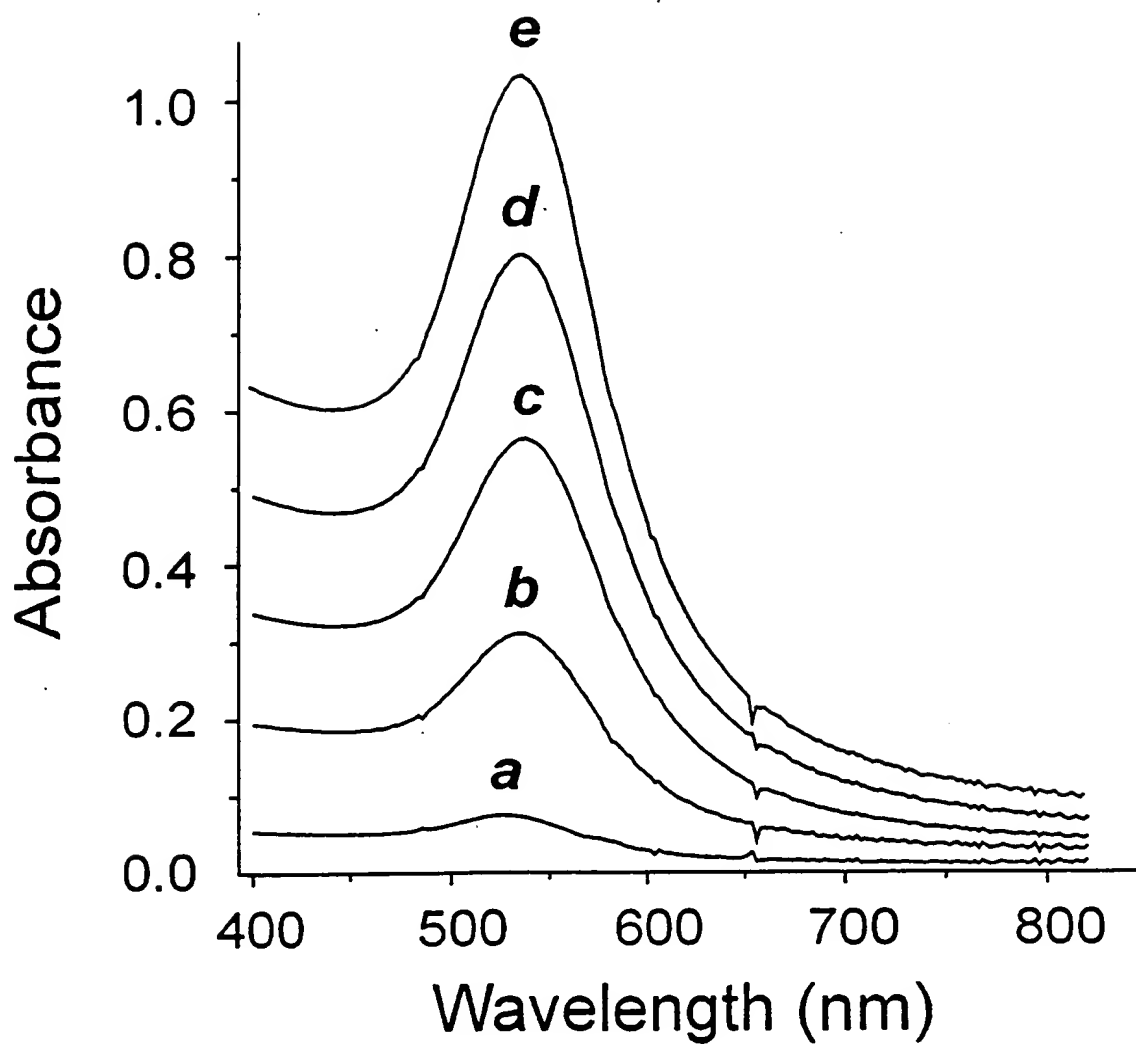


Figure 38A

FOOT-2004-00

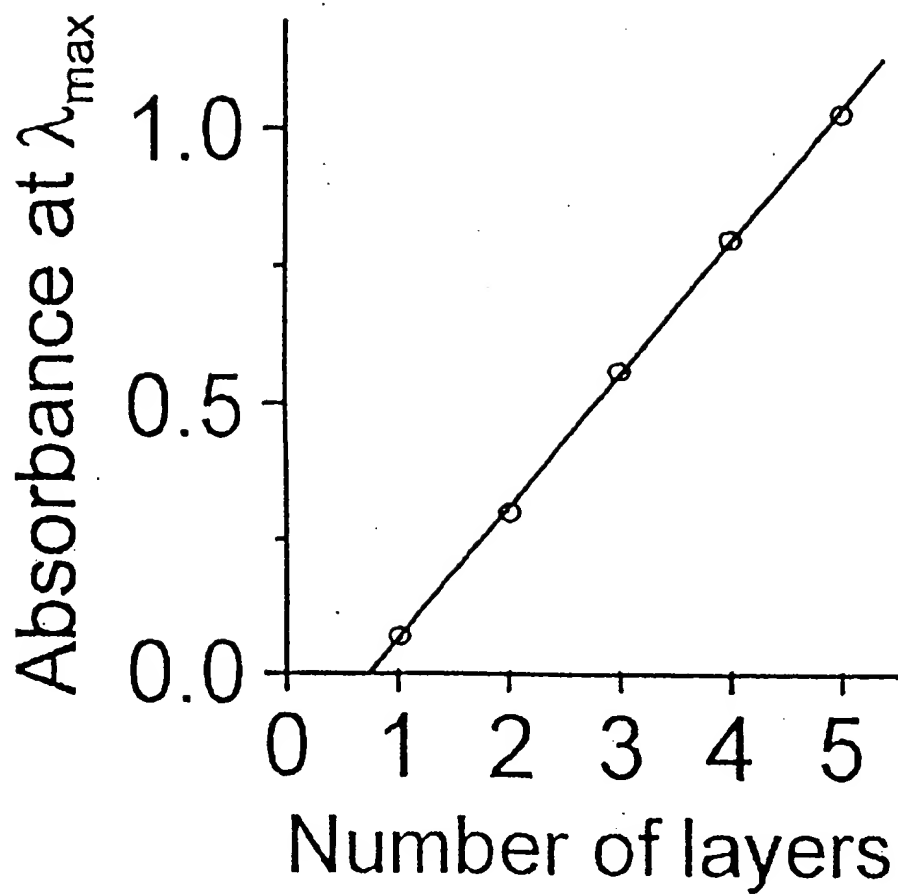


Figure 38B

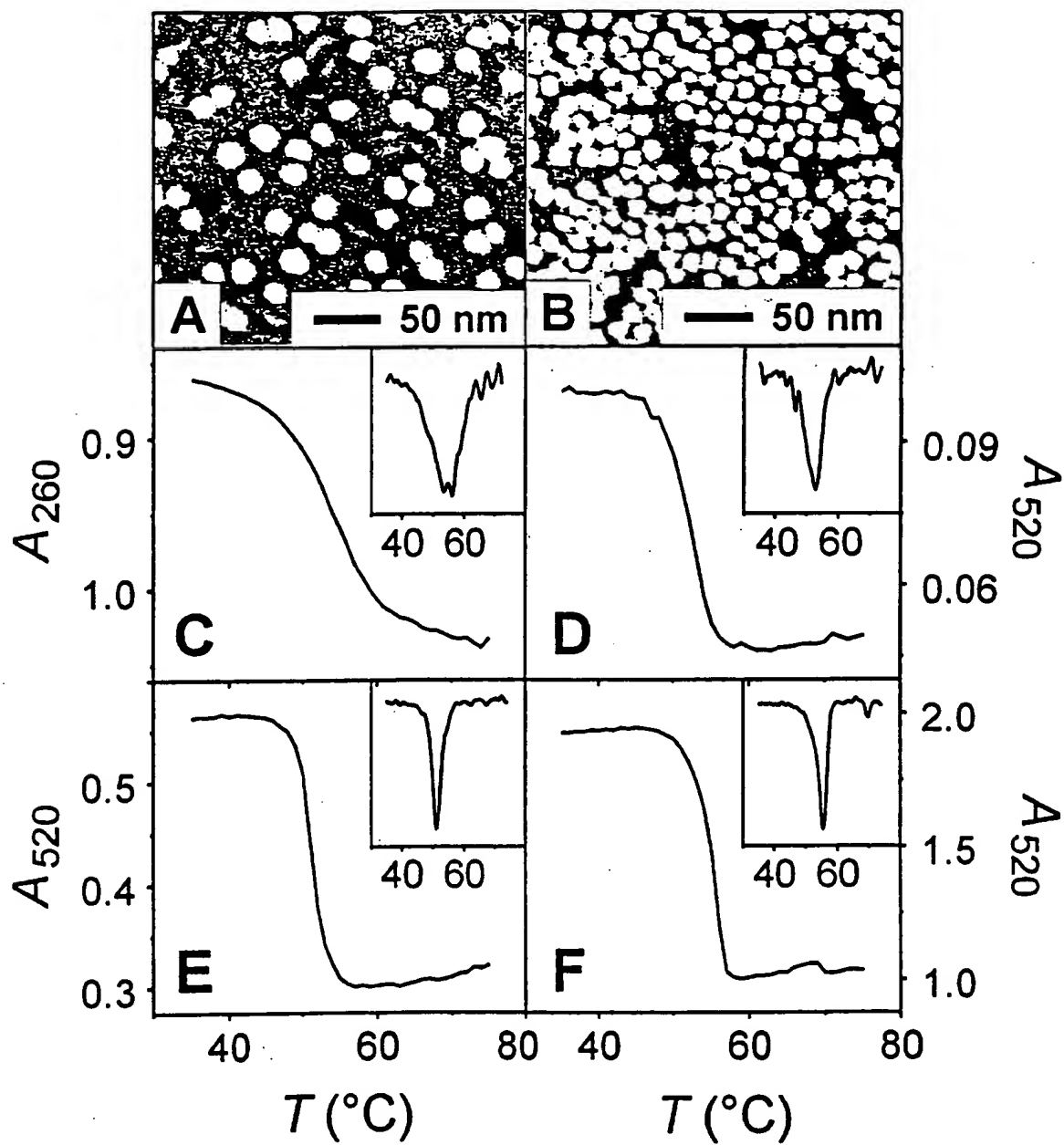


Figure 39

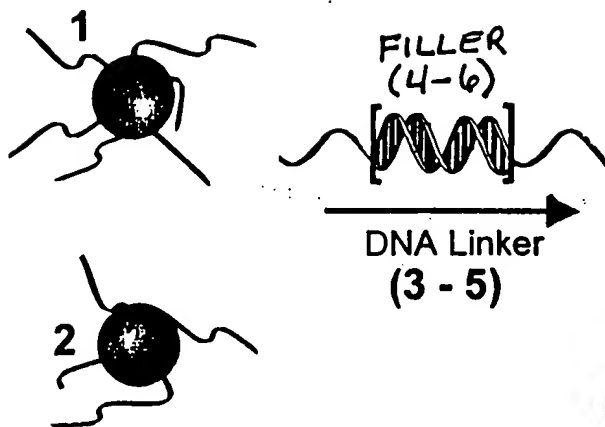


FIG. 40

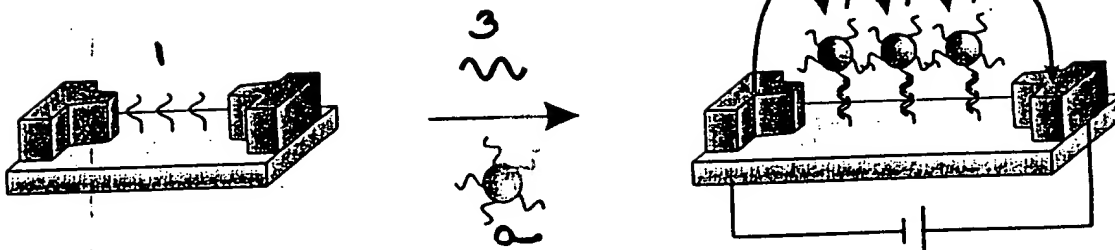
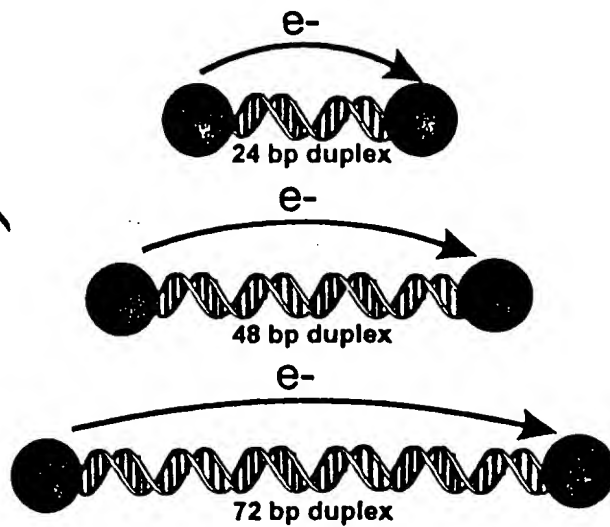


FIG. 41